

Appendix J: Transportation Analysis

Savira Solar Project

Draft Transportation Analysis

Prepared for:

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SD24-0531

FEHR  PEERS

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Executive Summary

This report summarizes the results of Fehr & Peers's transportation analysis for the proposed Savira Solar Project (Project) located near Desert Center, California. Our assessment consists of the following:

- Review of intersection sightlines near the proposed Project's access. Site access is anticipated to be via exiting Interstate-10 at Corn Springs Road and using the BLM route 950 to BLM route 511 to reach the Project site.
- Level of Service assessment under Existing, Existing Plus Project, Ambient No Project, and Ambient Plus Project conditions
- Qualitative vehicle miles traveled (VMT) assessment

This report is divided into the following sections:

- Introduction
- Analysis Methodologies
- Construction Trip Generation
- Existing No Project and Existing Plus Project Conditions
- Ambient No Project and Ambient Plus Project Conditions (which considers other in process solar projects as part of the "ambient" condition)
- Transportation Improvement Recommendations
- VMT Assessment

Construction of the Project will temporarily increase delays at intersections in the study area. Recommended delay reduction measures include working with nearby and concurrent developments to stagger arrival/departure times and peak construction periods and/or the potential installation of temporary traffic control during the busiest periods of the Project's construction.

Higher delays and longer vehicle queues at the study intersections only occur during peak construction conditions analyzed in the Ambient Plus Project scenario. This scenario represents a "worst case" scenario and is not expected to occur because the construction schedules of the nearby Redonda Solar and Bajada Solar projects are not expected to overlap. Still, even with peaks of all the projects aligning, queues should not back up onto the freeway and affect freeway operations

Given the Project's distance to both the Coachella Valley and Blythe, the Project is expected to generate approximately 120 daily VMT per worker. This is consistent with the VMT associated with most trips to and from the Desert Center area. Given that the Project's construction is temporary, and that the Project will produce few daily trips under normal operations, it is considered to have a less than significant impact on VMT.



Introduction

The Savira Solar project (Project) is a proposed 534.4-acre solar farm north of Interstate 10 and northwest of the Corn Springs Road interchange near Desert Center, California. The Project is located on private land. Site access is anticipated to be via exiting Interstate-10 at Corn Springs Road and using the BLM route 950 to BLM route 511 to reach the Project site.

Figure 1 displays the location of the Project and the surrounding roadway network. Fehr & Peers evaluated roadway and intersection operations for the following scenarios:

- **Existing Conditions** – Existing (2025) volumes were developed using traffic counts collected on April 24, 2025 in the study area and rounded up to the nearest 10. 2025 traffic counts are provided in **Appendix A**.
- **Existing Plus Project Conditions** – Existing roadway volumes plus traffic expected from peak construction related activity for the Project.
- **Ambient No Project Conditions** – Existing roadway volumes plus peak traffic expected from the other nearby projects in the development phase.
- **Ambient Plus Project Construction Conditions** – Ambient No Project Conditions plus peak traffic expected from construction related activity for the Project. This is the existing traffic volumes plus peak construction traffic generated by other nearby projects plus peak construction traffic generated by Savira Solar.



Figure 1: Study Area

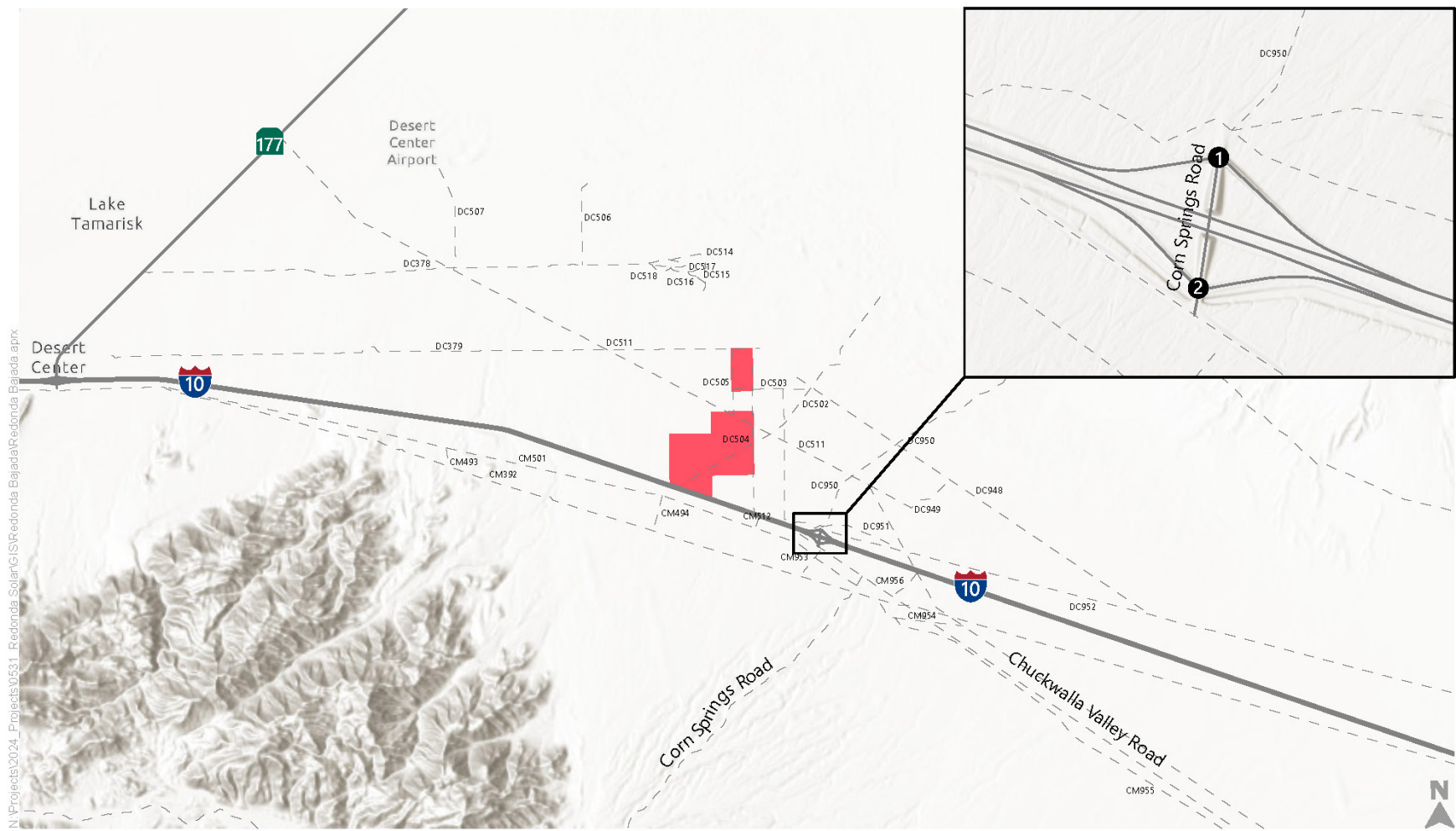


Figure 1
Study Area



The I-10/Corn Springs Road exit will be used by construction traffic accessing the Project site. The interchange has been used by construction traffic for other solar projects as well as improvements along I-10. Nearby roadways to the project include the following:

Interstate 10 (I-10): I-10 is a major east/west interstate freeway spanning the United States from Santa Monica, California to Jacksonville, Florida. It connects Southern California to Phoenix, Arizona and destinations further east. I-10 is a four-lane freeway with an interchange near the Project at Corn Springs Road. The posted speed limit on I-10 is 70 mph. In the study area, I-10 in the project vicinity carries 30,000 average daily trips (ADT).

Corn Spring Road: Corn Spring Rd is a two-lane north/south local roadway located in Desert Center, CA. It consists of on/off ramps for I-10 that lead to BLM OHV roads from which the Project site can be accessed.

State Route 177 (SR-177): SR-177 is a north/south highway running between Desert Center/I-10 and State Route 62 (approximately 25 miles northeast of Desert Center). SR-177 is a two-lane road, and the posted speed limit is 65 mph. It carries approximately 2,800 ADT.

Bureau of Land Management (BLM) Off Highway Vehicle (OHV) Routes 950 and 511 (BLM OHV 950 and 511): BLM OHV Route 950 travels north from the I-10/Corn Springs Road interchange. Approximately 0.7 miles north of the interchange, Route 950 intersects with BLM OHV Route 511. Traveling northwest on Route 511, Savira Solar can be accessed after approximately 1.3 miles.

Analysis Methodologies

Fehr & Peers calculated the Level of Service (LOS) at the study intersections using Transportation Research Board (TRB) Highway Capacity Manual (HCM) 7th Edition methodologies, 2022. All study intersections are Caltrans facilities. **Table 1** shows the HCM LOS criteria. A peak hour factor of 0.95 was used for all scenarios including the Project's and concurrent projects' construction traffic, as the volume of construction traffic is many times greater than the existing traffic on the roadway. Peak hour factors calculated from the existing conditions data were lower than 0.95, indicating that traffic is not distributed well throughout the peak hour; however, this is not representative of plus project conditions since construction traffic will be well distributed across the peak hour.



Table 1: Intersection Level of Service Criteria

Level of Service	Description	Signalized Delay (Seconds)	Unsignalized Delay (Seconds)
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0	> 10.0 to 15.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0	> 15.0 to 25.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	> 35.0 to 50.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0	> 50.0

Source: Highway Capacity Manual (Transportation Research Board, 2022).



Project Summary and Construction Trip Generation

Trip generation for the Project was developed for the construction phase using daily worker estimates and heavy vehicle activity for each week of construction provided by the applicant. The Savira Project is expected to begin construction late-2026. Detailed worker and truck trip generation by week for the project is provided in **Appendix C**.

At the peak of construction, the project is expected to have 554 workers on site and four truck deliveries per day. This analysis conservatively assumes that no workers would carpool to and from the site, that they will all arrive during the AM Peak Hour and depart during the PM Peak Hour, and that half the truck deliveries will occur during the AM Peak Hour and half will occur during the PM Peak Hour. Peak hour trips estimated for the construction of the Project are shown in **Table 2**. Note that delivery trucks for the proposed Project represent just under 1% of the total trips generated by the Project.

The Project will generate fewer than 20 daily trips during the operation phase, not warranting a VMT or operations analysis.

Table 2: Construction Trip Generation (Worst Case Scenario – All Workers Arriving and Departing During the Peak Hours)

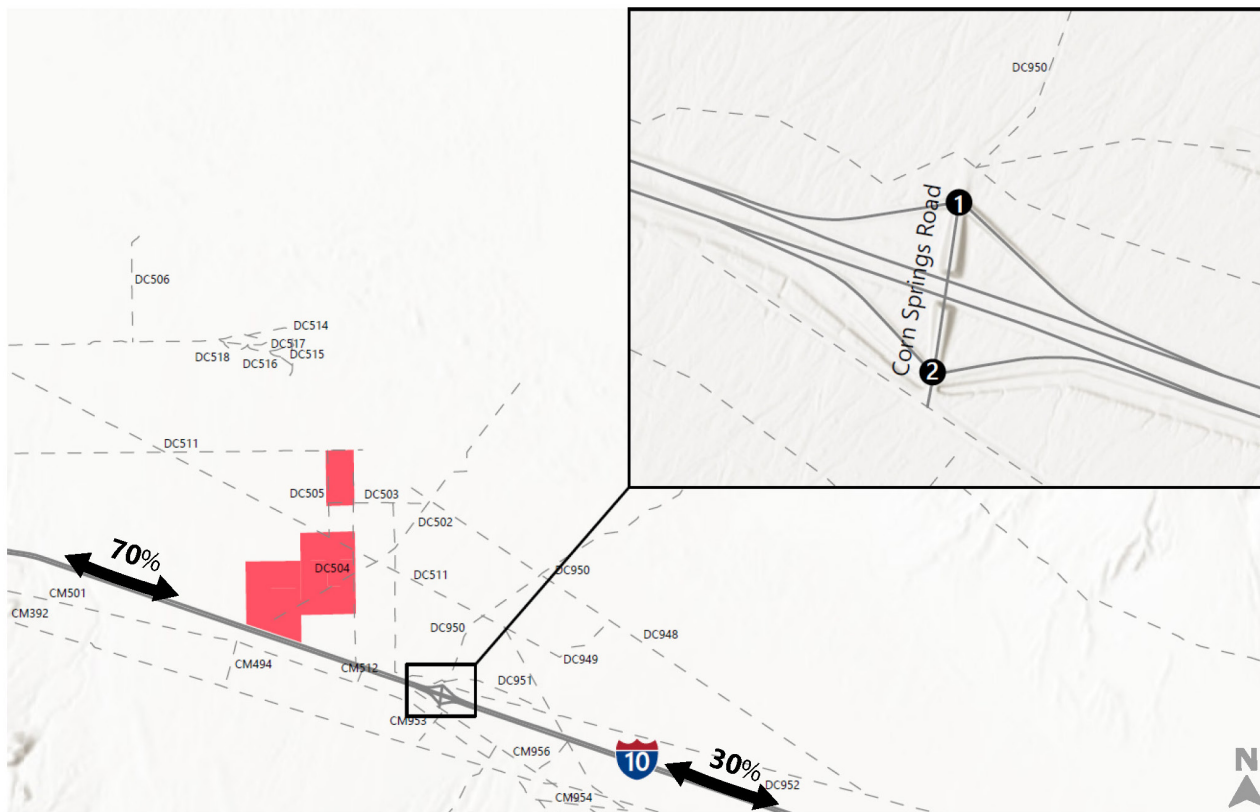
Trip Type	Daily Trips	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto	554	277	0	277	0	277	277
Trucks	8	2	2	4	2	2	4

Source: Fehr & Peers, 2025.

Trip distribution and assignment for the Project is shown on **Figure 2**. All trips were assumed to use the Corn Springs Road exit off the I-10 onto BLM OHV 950 and then onto BLM OHV 511 to access the site. 70% of trips were assumed to travel to and from the west and 30% of trips were assumed to travel to and from the east. This trip distribution was estimated based on population of communities to the west and east, the likelihood of workers commuting to and from those locations, as well as existing travel patterns in the study area.



Figure 2: Trip Distribution and Assignment



1. Corn Springs Road/I-10 WB Ramps	
<div> <div>1 (195)</div> <div>1 (84)</div> </div>	<div> <div>84 (1)</div> <div>0 (0)</div> <div>0 (0)</div> </div>
<div> <div>0 (0)</div> <div>195 (1)</div> </div>	<div> <div>0 (0)</div> <div>195 (1)</div> </div>
2. Corn Springs Road/I-10 EB Ramps	
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- # Study Intersection
- AM (PM) Peak Hour Traffic Volumes
- ↔ Lane Configuration
- Stop Sign
- Savira Solar
- BLM OHV Routes

Figure 2
Construction Trip Assignment

Existing No Project and Plus Project Conditions

Existing No Project and Plus Project traffic volumes, intersection configurations, and LOS are shown on **Figure 3**.

LOS results for Existing No Project conditions are shown in **Table 3**. There is minimal existing traffic using the Corn Springs Road interchange. The results indicate that all study intersections operate with little delay during both peak hours due to the low volumes of traffic. This is consistent with field observations, where little to no vehicular traffic was observed at the interchange. Detailed results can be found in **Appendix B**.

Table 3 also shows the LOS results at the study intersections for Existing Plus Project Conditions. Detailed results can be found in **Appendix B**. Delays on the Corn Spring Road off-ramps are not expected to change by more than a couple seconds during the peak hours. Since there is very little existing traffic at this interchange, the change in delay is associated with and experienced by the workers of the project and this change in delay is not considered an issue.

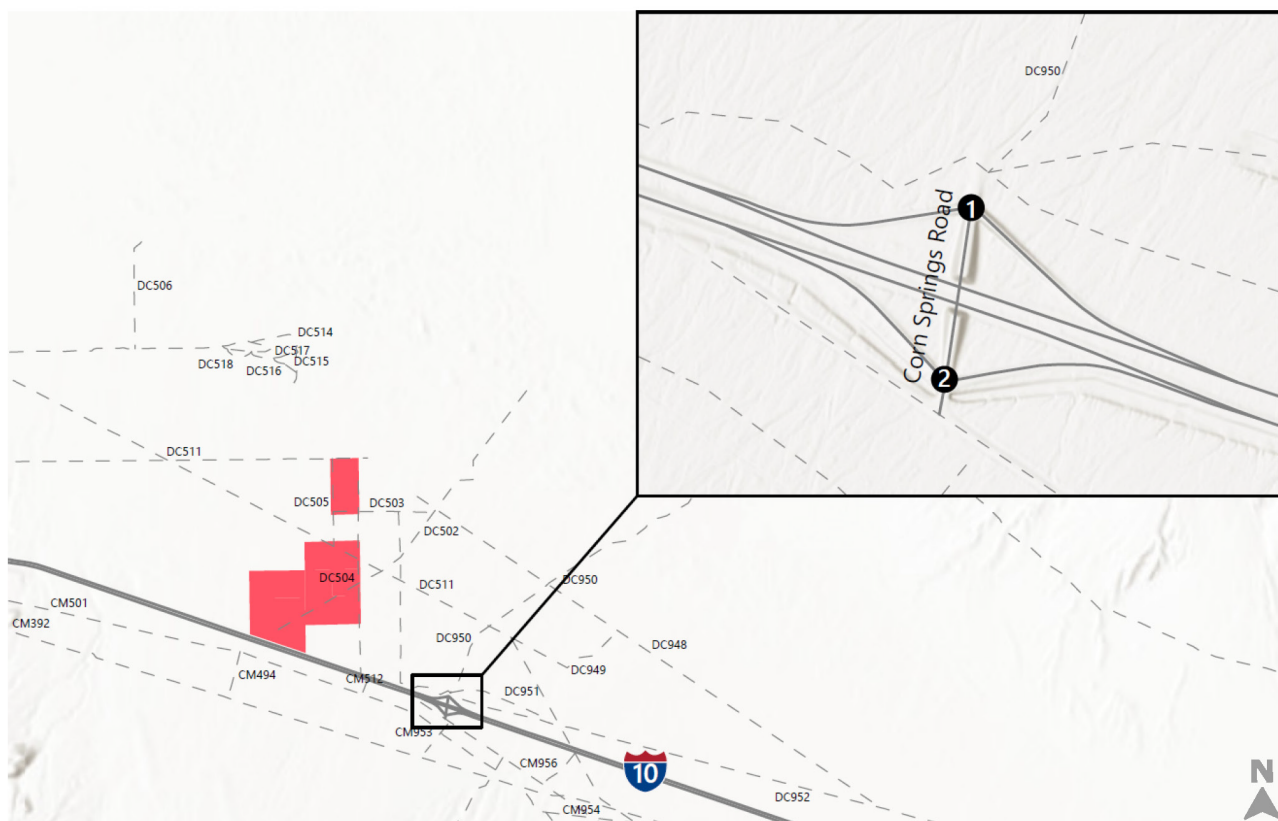
Table 3: Existing No Project and Plus Project Conditions LOS

Intersection	Control	Peak Period	Existing		Existing Plus Project	
			Delay	LOS	Delay	LOS
I-10 WB Ramps & Corn Springs Road	SSSC	AM	8.8	A	10.2	B
	SSSC	PM	8.8	A	8.9	A
I-10 EB Ramps & Corn Spring Road	SSSC	AM	8.8	A	10.0	B
	SSSC	PM	8.8	A	9.4	A

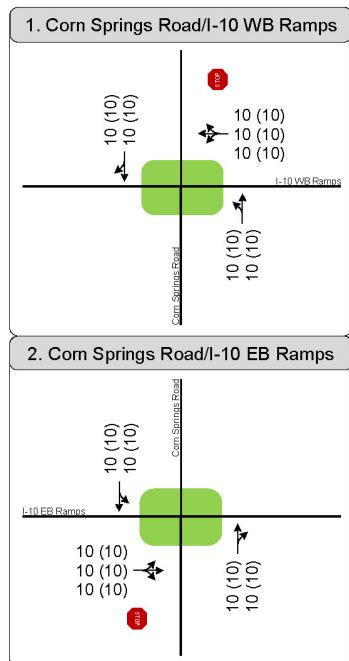
Notes
Calculated using methodologies consistent with HCM 7th Edition. Worst case movement reported for side street stop-controlled (SSSC) intersections.
Source: Fehr & Peers, 2025.



Figure 3: Existing No Project and Existing Plus Project Volumes and LOS



Existing (2025) Conditions



Existing Plus Project Conditions

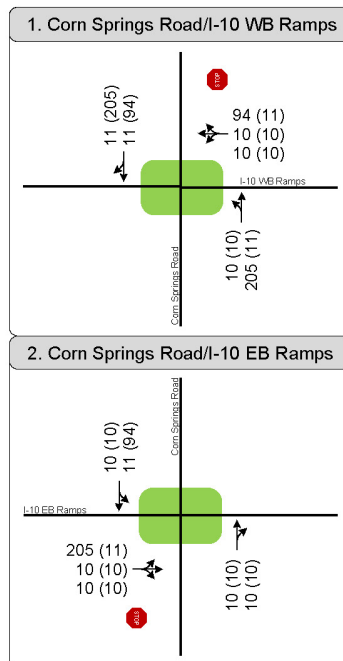
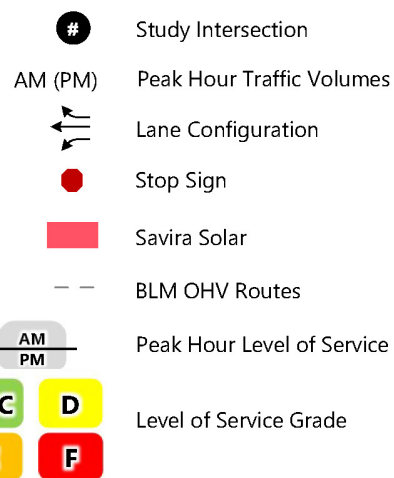


Figure 3

Peak Hour Traffic Volumes,
Lane Configurations, and LOS -
Existing and Existing Plus Project Conditions



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It is also important to understand whether or not delay and vehicle queuing affects the I-10 mainline. Vehicle queuing on the I-10/Corn Springs Road exit ramps was evaluated to determine if the addition of trips generated by the Project would cause queuing that extends to the I-10 mainline. The results of the queuing analysis are shown in **Table 4**. Therefore, an analysis of 95th percentile queues was performed. The 95th percentile queue is the length of queue which would not be exceeded 95 percent of the time and was calculated using the Synchro 12.0 analysis software.

The 95th percentile queues on the off-ramps are not expected to change during both peak hours because of the Project. The queues are much shorter than the length of the I-10 westbound off-ramp and the queues are not expected to spill back to the I-10 mainline.

Table 4: Off-Ramp Queues Under Existing and Existing Plus Project Conditions

Ramp	Storage Capacity (ft)	Peak Hour	Existing Conditions Queue (ft)	Existing Plus Project Conditions Queue (ft)
I-10 WB Ramps	1,300	AM	25	25
		PM	25	25
I-10 EB Ramps	1,200	AM	25	25
		PM	25	25

Notes

Queues provided are 95th percentile queues.

Assumes 25 feet per vehicle, consistent with HCM 7th Edition.



Ambient Conditions

There are two adjacent and potentially concurrent projects on BLM land: Redonda Solar and Bajada Solar. While they will not be constructed together, one or the other may have a construction schedule that overlaps with the late 2026 to 2027 construction schedule for the Project, per direction from the BLM. Publicly available data shows there are no other projects with an overlapping construction period in the vicinity. We conservatively evaluated “ambient conditions” by adding both the Redonda Solar project and Bajada Solar project to the existing traffic volumes.

While it is not likely that the peak trip generation for Redonda Solar and Bajada Solar will align exactly with the Project’s, maximum trips generated by the construction of Redonda Solar, Bajada Solar, and the Project were conservatively assumed to occur concurrently.

The peak hour trips generated by construction activities for the Redonda Solar and Bajada Solar projects are shown in **Table 5**. Trip distribution and access for the Redonda Solar and Bajada Solar projects was assumed to be the same as the Project’s.

Table 5: Trip Generation for Projects (Redonda and Bajada Solar) Included in Ambient No Project Conditions

Nearby Projects	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Total Worker Vehicles	2,010	1,005	0	1,005	0	1,005	1,005
Total Trucks	24	6	6	12	6	6	12

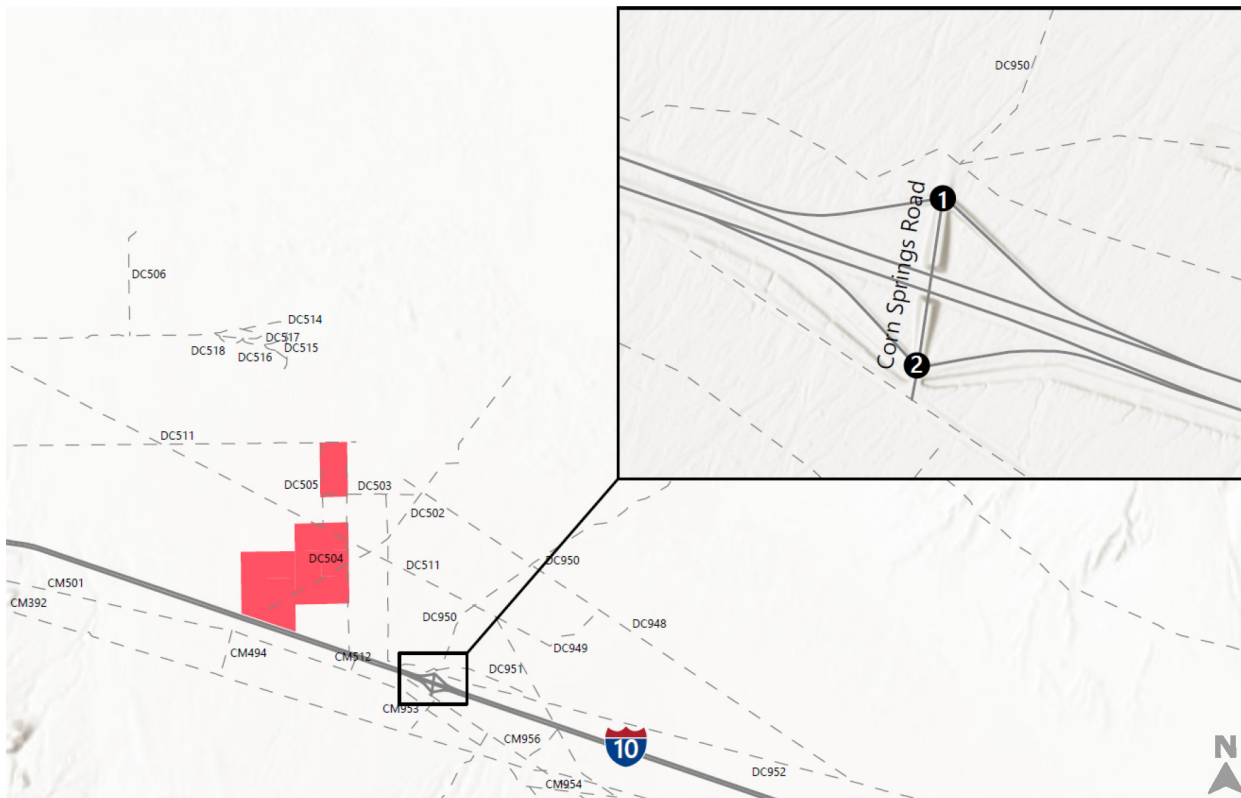
Source: Fehr & Peers, 2025.

Ambient No Project Conditions is the existing traffic volumes plus the traffic volumes from construction activities for Redonda Solar and Bajada Solar (**Table 5**). Ambient Plus Project Conditions is the existing traffic volumes plus construction activities for Redonda Solar and Bajada Solar plus construction activities for the Project.

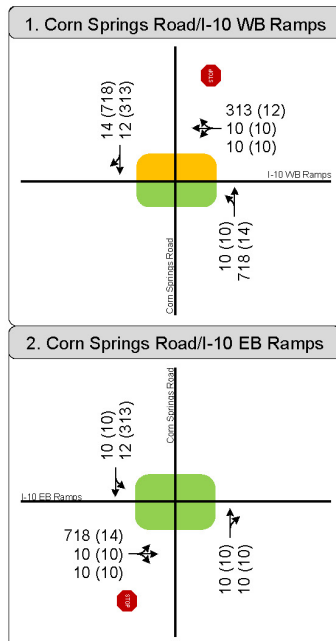
Figure 4 shows the Ambient No Project and Ambient Plus Project Volumes for the study intersections, and **Table 6** shows the LOS results at the study intersections for Ambient No Project and Ambient Plus Project Conditions. Detailed results can be found in **Appendix B**.



Figure 4: Peak Hour Traffic Volumes, Lane Configurations, and LOS – Ambient No Project and Ambient Plus Project Conditions



Ambient No Project Conditions



Ambient Plus Project Conditions

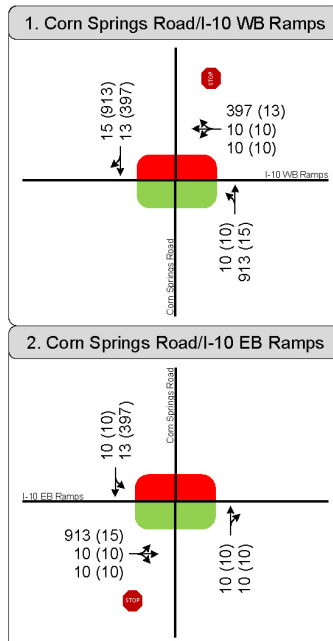
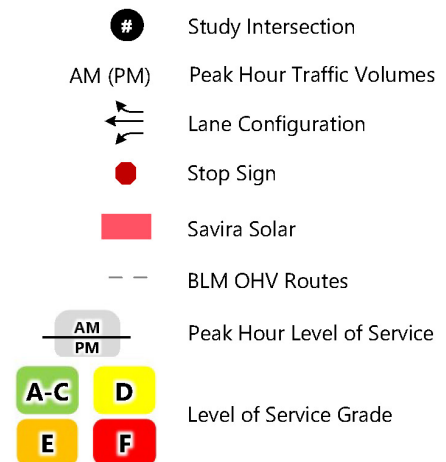


Figure 4

Peak Hour Traffic Volumes,
Lane Configurations, and LOS
Ambient and Ambient Plus Project Conditions-



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Table 6: Ambient No Project and Ambient Plus Project Conditions LOS

Intersection	Control	Peak Period	Ambient No Project		Ambient Plus Project	
			Delay	LOS	Delay	LOS
I-10 WB Ramps & Corn Springs Road	SSSC	AM	49.3	E	>100	F
	SSSC	PM	10.7	B	12.4	B
I-10 EB Ramps & Corn Spring Road	SSSC	AM	22.9	C	58.9	F
	SSSC	PM	14.2	B	18.0	C

Notes: Calculated using methodologies consistent with HCM 7th Edition. Worst case movement reported for side street stop-controlled (SSSC) intersections.

Source: Fehr & Peers, 2025.

The side street movements at the study intersections are projected to experience large delays during at least one peak hour under Ambient Plus Project conditions:

- I-10 WB Ramps & Corn Springs Road – LOS F (AM Peak Hour)
- I-10 EB Ramps & Corn Springs Road – LOS F (AM Peak Hour)

Since there is very little existing traffic at this interchange, the change in delay is associated with and experienced by the workers of the project and this change in delay is not considered an issue.

Note that the assumption that all workers for the Projects arrive during the morning peak hour and depart during the PM peak hour is contributing to the poor LOS at the side street approaches of the study intersections. If the workers' arrivals and departures were staggered over multiple shifts, or if the peaks of the Redonda, Bajada, and Savira construction do not align (which will likely be the case), the LOS would improve (as demonstrated in the following section of this document).

Vehicle queuing on the I-10/Corn Springs Road exit ramps was evaluated to determine if the addition of trips generated by Redonda Solar and the Project would cause queuing that extends to the I-10 mainline. The results of the queuing analysis are shown in **Table 7**. As shown, the 95th percentile I-10 off-ramp queues do not extend beyond the off-ramp length to the freeway mainline.

Table 7: Off-Ramp Queues Under Ambient and Ambient Plus Project Conditions

Ramp	Storage Capacity (ft)	Peak Hour	Ambient Conditions Queue (ft)	Ambient Plus Project Conditions Queue (ft)
I-10 WB Ramps	1,300	AM	225	600
		PM	25	25
I-10 EB Ramps	1,200	AM	250	550
		PM	25	50

Notes

Queues provided are 95th percentile queues.

Assumes 25 feet per vehicle, consistent with HCM 7th Edition.



Improved Operations Scenarios

The addition of Project Traffic to Ambient No Project Conditions causes delays at the study intersections. Fehr & Peers evaluated measures to reduce the intersection delays and vehicle queuing on the I-10 off-ramps. The following two options were evaluated (independent of each other):

1. Reduction in vehicle trips due to managing worker shifts
2. Install temporary signals/manual intersection control (assuming all worker trips occur during peak hours).

The results of these options are presented below.

Reduction in Vehicle Trips

Our analysis conservatively assumes that all commute trips by workers would take place during the peak hour, and that the peak construction periods of Redonda Solar, Bajada Solar, and the Project align. The average number of worker trips generated by the three projects over the course of construction is 57% lower than the peak number of construction trips analyzed in the previous sections. An analysis was completed to demonstrate how the intersections would operate under average construction trip generation for both Redonda Solar and the Project. This scenario can also represent situations where more than half of workers either carpooled or had a staggered work schedules such that not all workers would arrive or depart during the same hour. The results of the analysis are shown in **Table 8**. Under average construction conditions where there are 57% fewer worker trips as compared to combined peak conditions, delay and LOS are improved. Detailed analysis results are provided in **Appendix B**.

Table 8: Ambient Plus Project Conditions With Reduction in Peak Worker Trips

Intersection	Control	Peak Period	Ambient Plus Project		Ambient Plus 43% Project	
			Delay	LOS	Delay	LOS
I-10 WB Ramps & Corn Springs Road	SSSC	AM	> 100	F	13.7	B
	SSSC	PM	12.4	B	9.3	B
I-10 EB Ramps & Corn Springs Road	SSSC	AM	58.9	F	12.0	B
	SSSC	PM	18.0	C	10.8	B

Notes
Calculated using methodologies consistent with HCM 7th Edition. Worst case movement reported for side street stop-controlled (SSSC) intersections.
Source: Fehr & Peers, 2025.

While vehicle queues on the I-10 off-ramps are not expected to extend to the freeway mainline under Ambient Plus Project Conditions, a 57% reduction in peak worker trips for both projects would improve queuing conditions. The results of the queueing analysis are shown in **Table 9**.



Table 9: Ambient Plus Project Queues with Reduction in Peak Worker Trips

Ramp	Storage Capacity (ft)	Peak Hour	Ambient Plus Project Conditions Queue (ft)	Ambient Plus 43% Project Conditions Queue (ft)
I-10 WB Ramps	1,300	AM	600	50
		PM	25	25
I-10 EB Ramps	1,200	AM	550	75
		PM	50	25

Notes

Queues provided are 95th percentile queues.

Assumes 25 feet per vehicle, consistent with HCM 7th Edition.

Temporary Traffic Signals/Manual Control at Ramp Intersections

Alternatively, intersection delays and queues can also be improved through the installation of a temporary signal or use of manual intersection control at the freeway terminal intersections during the construction period. The effect of temporary signal control or manual traffic control at the ramp intersections was evaluated by coding traffic signals into the analysis software (Synchro). For this analysis, all worker trips were assumed to occur during the peak hours (the same assumption used for Ambient Plus Project Conditions). The delay and LOS results are in **Table 10**. Queueing results are shown in **Table 11**.

Table 10: Ambient Plus Project Conditions With Signal or Manual Traffic Control

Intersection	Control	Peak Period	Ambient Plus Project		Ambient Plus Project Signals	
			Delay	LOS	Delay	LOS
I-10 WB Ramps & Corn Springs Road	Manual/Signal	AM	> 100	F	17.7	B
	Manual/Signal	PM	12.4	B	15.0	B
I-10 EB Ramps & Corn Springs Road	Manual/Signal	AM	58.9	F	7.3	A
	Manual/Signal	PM	18.0	C	4.4	A

Notes

Calculated using methodologies consistent with HCM 7th Edition. Worst case movement reported for side street stop-controlled (SSSC) intersections.

Source: Fehr & Peers, 2025.



Table 11: Ambient Plus Project Queues with Signal or Manual Traffic Control

Ramp	Storage Capacity (ft)	Peak Hour	Ambient Plus Project Conditions Queue (ft)	Ambient Plus Project With Signal Conditions Queue (ft)
I-10 WB Ramps	1,300	AM	600	283
		PM	25	48
I-10 EB Ramps	1,200	AM	550	277
		PM	50	29

NotesQueues provided are 95th percentile queues.

Assumes 25 feet per vehicle, consistent with HCM 7th Edition.

The ramp terminal intersections operate at LOS B or LOS A when signalized, and queues do not spill back to the freeway mainline. The detailed analysis results are shown in **Appendix B**.

Summary

Under average construction conditions and scenarios where the worker vehicle trips generated by Redonda Solar, Bajada Solar, and the Project are lower than peak conditions, both LOS/delay and vehicle queuing are improved. Similarly, manual traffic control during the peak of construction activity would improve LOS to acceptable levels and reduce queues. We recommend that employee shifts are established such that employees arrive over a two-to-three-hour period and depart over a two-to-three hour period to reduce delay and queueing during the peak of construction.

Higher delays and longer vehicle queues at the study intersections only occur during peak construction conditions analyzed in the Ambient Plus Project scenario. This scenario represents a “worst case” scenario and is not expected to occur because the construction schedules of the nearby Redonda Solar and Bajada Solar projects are not expected to overlap. Still, even with peaks of all the projects aligning, queues should not back up onto the freeway and affect freeway operations

Once Redonda Solar, Bajada Solar, and the Project are constructed, the study intersections are expected to operate similarly to how they operate under existing conditions. The normal operating conditions at solar land uses generate little peak hour and daily traffic. Therefore, the delays identified in this study are a temporary, worst-case scenario condition. Since there is very little existing traffic at this interchange, almost all drivers experiencing any delay at the study intersections are the workers traveling to and from the project.



VMT Assessment

SB 743, signed by the Governor in 2013, changed the way transportation impacts are identified in CEQA. Specifically, the legislation has directed the Office of Planning and Research (OPR) to look at different metrics for identifying transportation as a CEQA impact. The updated CEQA Guidelines (December 2018) and the Final Office of Planning and Research (OPR) technical advisory for evaluating transportation impacts (December 2018) identify vehicle miles of travel (VMT) as the preferred metric for traffic impact analysis moving forward. In addition, the use of roadway capacity/delay metrics, such as LOS, as a CEQA impact is specifically prohibited. The evaluation of construction impacts using LOS is no longer allowed under CEQA.

Also, the OPR technical advisory indicates that any construction effects on transportation will be temporary and evaluation of VMT during the construction phase of a project can be a qualitative/high-level assessment.

The Project is roughly 60 miles on average from cities in the Coachella Valley to the west and Blythe, CA and Quartzsite, AZ to the east. The Project is therefore expected to produce approximately 120 average daily VMT per worker during construction. This is higher than the average daily VMT per person for Riverside County or for nearby communities in the Coachella Valley and Blythe. However, it is consistent with the average VMT for the Desert Center area, as few services are available to residents and most visitors or temporary workers must travel from the Coachella Valley, Blythe, or further to reach Desert Center.

The increase in VMT associated with the Project's construction is expected to be temporary and would therefore not have a significant impact. Once completed, the Project can be considered a "small project" per the OPR technical advisory given that it would generate less than 20 daily trips once operational and would therefore be presumed to have a less than significant impact.

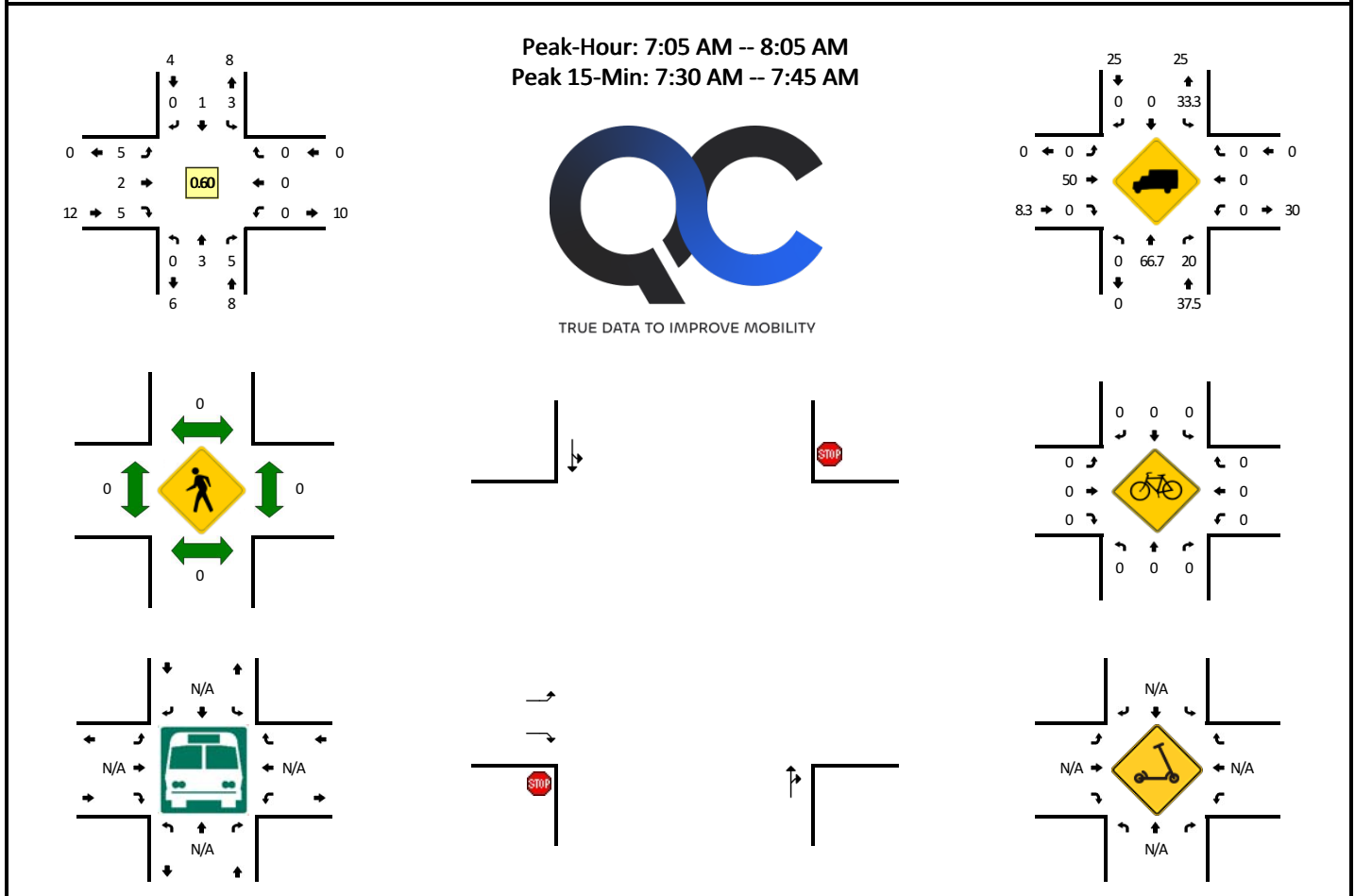
It should be noted that delay reduction measures such as encouraging carpooling also reduce VMT generated by the Project, reducing delay on roadways and reducing emissions associated with the Project.



Appendix A: Counts

LOCATION: Corn Springs Road -- I-10 EB Ramps
CITY/STATE: Riverside County, CA

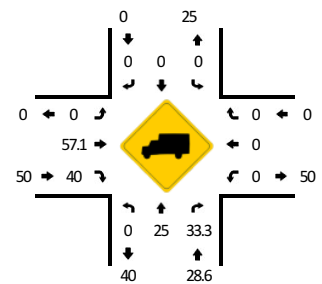
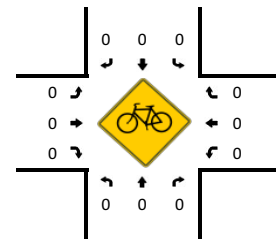
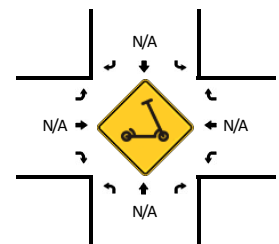
QC JOB #: 17016903
DATE: Thu, Apr 24 2025



5-Min Count Period Beginning At	Corn Springs Road (Northbound)				Corn Springs Road (Southbound)				I-10 EB Ramps (Eastbound)				I-10 EB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	4	
7:10 AM	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	3	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:20 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:25 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	
7:30 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	
7:35 AM	0	0	1	0	1	0	0	0	0	0	3	0	0	0	0	0	5	
7:40 AM	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	3	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:50 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:55 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	22
8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	24
8:05 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	22
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
8:20 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	20
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	17
8:35 AM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	14
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	12	0	4	0	0	0	8	4	12	0	0	0	0	0	40	
Heavy Trucks	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

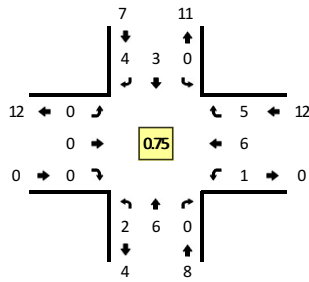
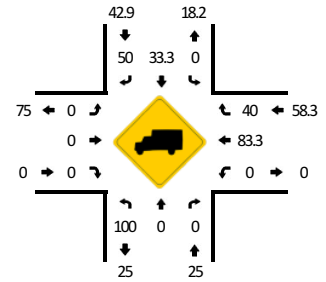
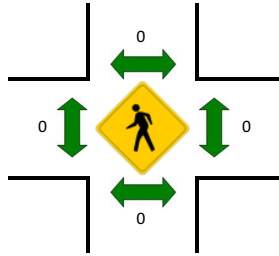
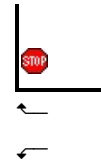
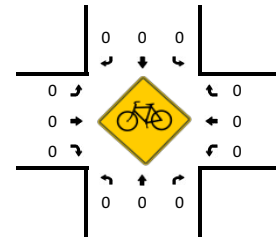
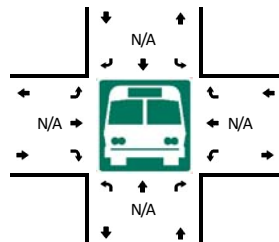
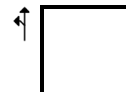
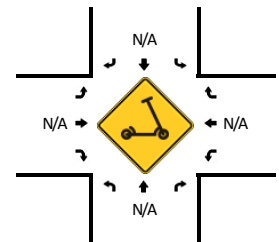
QC JOB #: 17016904
DATE: Thu, Apr 24 2025



Comments:

LOCATION: Corn Springs Road -- I-10 WB Ramps**CITY/STATE:** Desert Center, CA**QC JOB #:** 17016901**DATE:** Thu, Apr 24 2025

Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

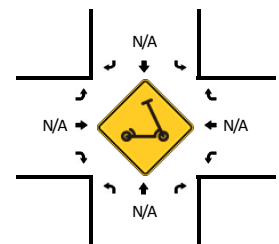


5-Min Count Period Beginning At	Corn Springs Road (Northbound)				Corn Springs Road (Southbound)				I-10 WB Ramps (Eastbound)				I-10 WB Ramps (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:05 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:10 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	3	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:20 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:25 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3	
7:30 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3	
7:35 AM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3	
7:40 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
7:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
7:55 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	23
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	25
8:05 AM	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4	27
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	25
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
8:20 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	23
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	21
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	19
8:35 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	18
8:40 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	18
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	19
8:50 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	19
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	8	0	0	0	8	12	0	0	0	0	0	0	0	8	0	36	
Heavy Trucks	0	0	0	0	0	4	4	0	0	0	0	0	0	0	4	0	12	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scooters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

QC JOB #: 17016902

DATE: Thu, Apr 24 2025



Comments:

Appendix B: LOS Worksheets

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Existing (2024) Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	10	10	10	0	0	10	10
Future Vol, veh/h	0	0	0	10	10	10	10	10	0	0	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	65	65	65	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	15	15	15	15	15	0	0	15	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	77	15	31	0	-
Stage 1	46	46	-	-	-	-
Stage 2	15	31	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	945	813	1064	1582	-	0
Stage 1	976	856	-	-	-	0
Stage 2	1007	869	-	-	-	0
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	936	0	1064	1582	-	-
Mov Cap-2 Maneuver	936	0	-	-	-	-
Stage 1	967	0	-	-	-	-
Stage 2	1007	0	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.79	3.65	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	900	-	996	-
HCM Lane V/C Ratio	0.01	-	0.046	-
HCM Control Delay (s/veh)	7.3	0	8.8	-
HCM Lane LOS	A	A	A	-
HCM 95th %tile Q(veh)	0	-	0.1	-

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Existing (2024) Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	10	10	10	0	0	0	0	10	10	10	10	0
Future Vol, veh/h	10	10	10	0	0	0	0	10	10	10	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	14	14	0	0	0	0	14	14	14	14	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	57	71	14	-	0	0	29	0	0
Stage 1	43	43	-	-	-	-	-	-	-
Stage 2	14	29	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	950	819	1066	0	-	-	1585	-	0
Stage 1	980	859	-	0	-	-	-	-	0
Stage 2	1009	871	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	942	0	1066	-	-	-	1585	-	-
Mov Cap-2 Maneuver	942	0	-	-	-	-	-	-	-
Stage 1	980	0	-	-	-	-	-	-	-
Stage 2	999	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.76	0	3.65
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	900	-
HCM Lane V/C Ratio	-	-	0.043	0.009	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Existing (2024) Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	10	10	10	0	0	10	10
Future Vol, veh/h	0	0	0	10	10	10	10	10	0	0	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	65	65	65	65	65	65	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	15	15	15	15	15	0	0	15	15
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				62	77	15	31	0	-	-	-	0
Stage 1				46	46	-	-	-	-	-	-	-
Stage 2				15	31	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				945	813	1064	1582	-	0	0	-	-
Stage 1				976	856	-	-	-	0	0	-	-
Stage 2				1007	869	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				936	0	1064	1582	-	-	-	-	-
Mov Cap-2 Maneuver				936	0	-	-	-	-	-	-	-
Stage 1				967	0	-	-	-	-	-	-	-
Stage 2				1007	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s/v				8.79		3.65		0				
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR							
Capacity (veh/h)	900	-	996	-	-							
HCM Lane V/C Ratio	0.01	-	0.046	-	-							
HCM Control Delay (s/veh)	7.3	0	8.8	-	-							
HCM Lane LOS	A	A	A	-	-							
HCM 95th %tile Q(veh)	0	-	0.1	-	-							

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Existing (2024) Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	10	10	10	0	0	0	0	10	10	10	10	0
Future Vol, veh/h	10	10	10	0	0	0	0	10	10	10	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	14	14	0	0	0	0	14	14	14	14	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	57	71	14	-	0	0	29	0	0
Stage 1	43	43	-	-	-	-	-	-	-
Stage 2	14	29	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	950	819	1066	0	-	-	1585	-	0
Stage 1	980	859	-	0	-	-	-	-	0
Stage 2	1009	871	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	942	0	1066	-	-	-	1585	-	-
Mov Cap-2 Maneuver	942	0	-	-	-	-	-	-	-
Stage 1	980	0	-	-	-	-	-	-	-
Stage 2	999	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.76	0	3.65
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	900	-
HCM Lane V/C Ratio	-	-	0.043	0.009	-
HCM Control Delay (s/veh)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Existing (2024) Plus Project
AM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Vol, veh/h	0	0	0	10	10	94	10	205	0	0	11	11
Future Vol, veh/h	0	0	0	10	10	94	10	205	0	0	11	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	10	10
Mvmt Flow	0	0	0	11	11	99	11	216	0	0	12	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	248	260	216	23	0	-
Stage 1	237	237	-	-	-	-
Stage 2	12	23	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	740	645	824	1592	-	0
Stage 1	802	709	-	-	-	0
Stage 2	1011	876	-	-	-	0
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	734	0	824	1592	-	-
Mov Cap-2 Maneuver	734	0	-	-	-	-
Stage 1	796	0	-	-	-	-
Stage 2	1011	0	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.18	0.34	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	84	-	815	-
HCM Lane V/C Ratio	0.007	-	0.147	-
HCM Control Delay (s/veh)	7.3	0	10.2	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	0.5	-

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Existing (2024) Plus Project
AM Peak Hour

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	205	10	10	0	0	0	0	10	10	11	10	0
Future Vol, veh/h	205	10	10	0	0	0	0	10	10	11	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	100	2	2
Mvmt Flow	216	11	11	0	0	0	0	11	11	12	11	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	44	55	11	-	0	0	21	0	0
Stage 1	34	34	-	-	-	-	-	-	-
Stage 2	11	21	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	5.1	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	3.1	-	-
Pot Cap-1 Maneuver	966	836	1071	0	-	-	1137	-	0
Stage 1	989	867	-	0	-	-	-	-	0
Stage 2	1012	878	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	956	0	1071	-	-	-	1137	-	-
Mov Cap-2 Maneuver	956	0	-	-	-	-	-	-	-
Stage 1	989	0	-	-	-	-	-	-	-
Stage 2	1002	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.97	0	4.29
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	961	943	-
HCM Lane V/C Ratio	-	-	0.246	0.01	-
HCM Control Delay (s/veh)	-	-	10	8.2	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	1	0	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Existing (2024) Plus Project
PM Peak Hour

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	11	10	11	0	0	94	205
Future Vol, veh/h	0	0	0	10	10	11	10	11	0	0	94	205
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	10	2	10	2	2	2	2
Mvmt Flow	0	0	0	11	11	12	11	12	0	0	99	216
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				132	347	12	315	0	-	-	-	0
Stage 1				33	33	-	-	-	-	-	-	-
Stage 2				99	315	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.3	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.39	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				862	576	1046	1245	-	0	0	-	-
Stage 1				990	868	-	-	-	0	0	-	-
Stage 2				925	656	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				855	0	1046	1245	-	-	-	-	-
Mov Cap-2 Maneuver				855	0	-	-	-	-	-	-	-
Stage 1				981	0	-	-	-	-	-	-	-
Stage 2				925	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s/v				8.94		3.77		0				
HCM LOS				A								
Minor Lane/Major Mvmt		NBL	NBTWBLn1	SBT	SBR							
Capacity (veh/h)		857	-	946	-	-						
HCM Lane V/C Ratio		0.008	-	0.035	-	-						
HCM Control Delay (s/veh)		7.9	0	8.9	-	-						
HCM Lane LOS		A	A	A	-	-						
HCM 95th %tile Q(veh)		0	-	0.1	-	-						

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Existing (2024) Plus Project
PM Peak Hour

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	10	10	0	0	0	0	10	10	94	10	0
Future Vol, veh/h	11	10	10	0	0	0	0	10	10	94	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	9	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	11	11	0	0	0	0	11	11	99	11	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	219	229	11	-	0	0	21	0	0
Stage 1	208	208	-	-	-	-	-	-	-
Stage 2	11	21	-	-	-	-	-	-	-
Critical Hdwy	6.49	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.49	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.49	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.581	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	754	670	1071	0	-	-	1595	-	0
Stage 1	810	730	-	0	-	-	-	-	0
Stage 2	994	878	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	707	0	1071	-	-	-	1595	-	-
Mov Cap-2 Maneuver	707	0	-	-	-	-	-	-	-
Stage 1	810	0	-	-	-	-	-	-	-
Stage 2	932	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.44	0	6.69
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	843	1585	-
HCM Lane V/C Ratio	-	-	0.039	0.062	-
HCM Control Delay (s/veh)	-	-	9.4	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Ambient No Project
AM Peak Hour

Intersection												
Int Delay, s/veh	15.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	313	10	718	0	0	12	14
Future Vol, veh/h	0	0	0	10	10	313	10	718	0	0	12	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	20	28
Mvmt Flow	0	0	0	11	11	329	11	756	0	0	13	15

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	789	804	756	27	0	-	0
Stage 1	777	777	-	-	-	-	-
Stage 2	13	27	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	359	316	408	1586	-	0	-
Stage 1	453	407	-	-	0	0	-
Stage 2	1010	872	-	-	0	0	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	355	0	408	1586	-	-	-
Mov Cap-2 Maneuver	355	0	-	-	-	-	-
Stage 1	448	0	-	-	-	-	-
Stage 2	1010	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	49.27	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	25	-	406	-
HCM Lane V/C Ratio	0.007	-	0.863	-
HCM Control Delay (s/veh)	7.3	0	49.3	-
HCM Lane LOS	A	A	E	-
HCM 95th %tile Q(veh)	0	-	8.5	-

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Ambient No Project
AM Peak Hour

Intersection												
Int Delay, s/veh	21.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	718	10	10	0	0	0	0	10	10	12	10	0
Future Vol, veh/h	718	10	10	0	0	0	0	10	10	12	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	100	2	2
Mvmt Flow	756	11	11	0	0	0	0	11	11	13	11	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	46	57	11	-	0	0	21	0	0
Stage 1	36	36	-	-	-	-	-	-	-
Stage 2	11	21	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	5.1	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	3.1	-	-
Pot Cap-1 Maneuver	964	834	1071	0	-	-	1137	-	0
Stage 1	987	865	-	0	-	-	-	-	0
Stage 2	1012	878	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	953	0	1071	-	-	-	1137	-	-
Mov Cap-2 Maneuver	953	0	-	-	-	-	-	-	-
Stage 1	987	0	-	-	-	-	-	-	-
Stage 2	1001	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	22.9	0	4.47
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	954	982	-
HCM Lane V/C Ratio	-	-	0.814	0.011	-
HCM Control Delay (s/veh)	-	-	22.9	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	9.3	0	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Ambient No Project
PM Peak Hour

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	12	10	14	0	0	313	718
Future Vol, veh/h	0	0	0	10	10	12	10	14	0	0	313	718
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	20	2	28	2	2	2	2
Mvmt Flow	0	0	0	11	11	13	11	15	0	0	329	756
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				365	1121	15	1085	0	-	-	-	0
Stage 1				36	36	-	-	-	-	-	-	-
Stage 2				329	1085	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.4	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.48	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				634	206	1015	643	-	0	0	-	-
Stage 1				987	865	-	-	-	0	0	-	-
Stage 2				729	293	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				624	0	1015	643	-	-	-	-	-
Mov Cap-2 Maneuver				624	0	-	-	-	-	-	-	-
Stage 1				970	0	-	-	-	-	-	-	-
Stage 2				729	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s/v				9.76		4.46		0				
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR							
Capacity (veh/h)	638	-	790	-	-							
HCM Lane V/C Ratio	0.016	-	0.043	-	-							
HCM Control Delay (s/veh)	10.7	0	9.8	-	-							
HCM Lane LOS	B	A	A	-	-							
HCM 95th %tile Q(veh)	0	-	0.1	-	-							

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Ambient No Project
PM Peak Hour

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	14	10	10	0	0	0	0	10	10	313	10	0
Future Vol, veh/h	14	10	10	0	0	0	0	10	10	313	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	28	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	11	11	0	0	0	0	11	11	329	11	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	680	691	11	-	0	0	21	0	0
Stage 1	669	669	-	-	-	-	-	-	-
Stage 2	11	21	-	-	-	-	-	-	-
Critical Hdwy	6.68	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.68	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.68	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.752	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	379	368	1071	0	-	-	1595	-	0
Stage 1	463	456	-	0	-	-	-	-	0
Stage 2	949	878	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	300	0	1071	-	-	-	1595	-	-
Mov Cap-2 Maneuver	300	0	-	-	-	-	-	-	-
Stage 1	463	0	-	-	-	-	-	-	-
Stage 2	752	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v14.15		0	7.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	429	1585	-
HCM Lane V/C Ratio	-	-	0.083	0.207	-
HCM Control Delay (s/veh)	-	-	14.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.8	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Ambient Plus Project
AM Peak Hour

Intersection												
Int Delay, s/veh	72.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	
Traffic Vol, veh/h	0	0	0	10	10	397	10	913	0	0	13	15
Future Vol, veh/h	0	0	0	10	10	397	10	913	0	0	13	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	23	33
Mvmt Flow	0	0	0	11	11	418	11	961	0	0	14	16
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				996	1012	961	29	0	-	-	-	0
Stage 1				982	982	-	-	-	-	-	-	-
Stage 2				14	29	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver				271	239	~ 311	1584	-	0	0	-	-
Stage 1				363	327	-	-	-	0	0	-	-
Stage 2				1009	871	-	-	-	0	0	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver				267	0	~ 311	1584	-	-	-	-	-
Mov Cap-2 Maneuver				267	0	-	-	-	-	-	-	-
Stage 1				358	0	-	-	-	-	-	-	-
Stage 2				1009	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s/v				238.15		0.08		0				
HCM LOS				F								
Minor Lane/Major Mvmt		NBL	NBTWBLn1	SBT	SBR							
Capacity (veh/h)		20	-	310	-	-						
HCM Lane V/C Ratio		0.007	-	1.418	-	-						
HCM Control Delay (s/veh)		7.3	0	238.1	-	-						
HCM Lane LOS		A	A	F	-	-						
HCM 95th %tile Q(veh)		0	-	23.2	-	-						
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon				

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project
AM Peak Hour

Intersection												
Int Delay, s/veh	56.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	913	10	10	0	0	0	0	10	10	13	10	0
Future Vol, veh/h	913	10	10	0	0	0	0	10	10	13	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	100	2	2
Mvmt Flow	961	11	11	0	0	0	0	11	11	14	11	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	48	59	11	-	0	0	21	0	0
Stage 1	38	38	-	-	-	-	-	-	-
Stage 2	11	21	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	-	-	-	5.1	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	-	-	3.1	-	-
Pot Cap-1 Maneuver	~ 961	832	1071	0	-	-	1137	-	0
Stage 1	985	863	-	0	-	-	-	-	0
Stage 2	1012	878	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 949	0	1071	-	-	-	1137	-	-
Mov Cap-2 Maneuver	~ 949	0	-	-	-	-	-	-	-
Stage 1	985	0	-	-	-	-	-	-	-
Stage 2	1000	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v58.87		0	4.64
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	951	1017	-
HCM Lane V/C Ratio	-	-	1.033	0.012	-
HCM Control Delay (s/veh)	-	-	58.9	8.2	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	21.3	0	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Ambient Plus Project
PM Peak Hour

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	13	10	15	0	0	397	913
Future Vol, veh/h	0	0	0	10	10	13	10	15	0	0	397	913
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	23	2	33	2	2	2	2
Mvmt Flow	0	0	0	11	11	14	11	16	0	0	418	961

Major/Minor	Minor1		Major1		Major2					
Conflicting Flow All	455	1416	16	1379	0	-	-	-	-	0
Stage 1	37	37	-	-	-	-	-	-	-	-
Stage 2	418	1379	-	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.43	4.12	-	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.507	2.218	-	-	-	-	-	-
Pot Cap-1 Maneuver	563	137	1006	497	-	0	0	-	-	-
Stage 1	986	864	-	-	-	0	0	-	-	-
Stage 2	664	212	-	-	-	0	0	-	-	-
Platoon blocked, %					-			-	-	-
Mov Cap-1 Maneuver	551	0	1006	497	-	-	-	-	-	-
Mov Cap-2 Maneuver	551	0	-	-	-	-	-	-	-	-
Stage 1	965	0	-	-	-	-	-	-	-	-
Stage 2	664	0	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	10.1	4.96	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	493	-	740	-
HCM Lane V/C Ratio	0.021	-	0.047	-
HCM Control Delay (s/veh)	12.4	0	10.1	-
HCM Lane LOS	B	A	B	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project
PM Peak Hour

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	15	10	10	0	0	0	0	10	10	397	10	0
Future Vol, veh/h	15	10	10	0	0	0	0	10	10	397	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	33	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	11	11	0	0	0	0	11	11	418	11	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	857	867	11	-	0	0	21	0	0
Stage 1	846	846	-	-	-	-	-	-	-
Stage 2	11	21	-	-	-	-	-	-	-
Critical Hdwy	6.73	6.52	6.22	-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.73	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.73	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.797	4.018	3.318	-	-	-	2.218	-	-
Pot Cap-1 Maneuver	290	291	1071	0	-	-	1595	-	0
Stage 1	373	378	-	0	-	-	-	-	0
Stage 2	938	878	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	214	0	1071	-	-	-	1595	-	-
Mov Cap-2 Maneuver	214	0	-	-	-	-	-	-	-
Stage 1	373	0	-	-	-	-	-	-	-
Stage 2	690	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v17.96		0	7.86
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	314	1585	-
HCM Lane V/C Ratio	-	-	0.117	0.262	-
HCM Control Delay (s/veh)	-	-	18	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	1.1	-

HCM 7th TWSC
1: Corn Springs Road & I-10 WB Ramps

Ambient Plus Project 57% Volume Reduction
AM Peak Hour

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	179	10	405	0	0	12	13
Future Vol, veh/h	0	0	0	10	10	179	10	405	0	0	12	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	20	23
Mvmt Flow	0	0	0	11	11	188	11	426	0	0	13	14

Major/Minor	Minor1		Major1		Major2		
Conflicting Flow All	460	474	426	26	0	-	0
Stage 1	447	447	-	-	-	-	-
Stage 2	13	26	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	559	489	628	1588	-	0	-
Stage 1	644	573	-	-	0	0	-
Stage 2	1010	873	-	-	0	0	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	555	0	628	1588	-	-	-
Mov Cap-2 Maneuver	555	0	-	-	-	-	-
Stage 1	639	0	-	-	-	-	-
Stage 2	1010	0	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.66	0.18	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	43	-	624	-
HCM Lane V/C Ratio	0.007	-	0.336	-
HCM Control Delay (s/veh)	7.3	0	13.7	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0	-	1.5	-

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project 57% Volume Reduction
AM Peak Hour

Intersection												
Int Delay, s/veh	11.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔						↔↕			↕↔	
Traffic Vol, veh/h	405	10	10	0	0	0	0	10	10	12	10	0
Future Vol, veh/h	405	10	10	0	0	0	0	10	10	12	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	100	2	2
Mvmt Flow	426	11	11	0	0	0	0	11	11	13	11	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	46	57	11				-	0	0	21	0	0
Stage 1	36	36	-				-	-	-	-	-	-
Stage 2	11	21	-				-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22				-	-	-	5.1	-	-
Critical Hdwy Stg 1	5.42	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318				-	-	-	3.1	-	-
Pot Cap-1 Maneuver	964	834	1071				0	-	-	1137	-	0
Stage 1	987	865	-				0	-	-	-	-	0
Stage 2	1012	878	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	953	0	1071				-	-	-	1137	-	-
Mov Cap-2 Maneuver	953	0	-				-	-	-	-	-	-
Stage 1	987	0	-				-	-	-	-	-	-
Stage 2	1001	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s/v12.04							0			4.47		
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	955	982	-						
HCM Lane V/C Ratio		-	-	0.468	0.011	-						
HCM Control Delay (s/veh)		-	-	12	8.2	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	2.5	0	-						

HCM 7th TWSC
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Ambient Plus Project 57% Volume Reduction
PM Peak Hour

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	10	12	10	13	0	0	179	405
Future Vol, veh/h	0	0	0	10	10	12	10	13	0	0	179	405
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	20	2	23	2	2	2	2
Mvmt Flow	0	0	0	11	11	13	11	14	0	0	188	426

Major/Minor	Minor1		Major1		Major2					
Conflicting Flow All	223	649	14	615	0	-	-	-	-	0
Stage 1	35	35	-	-	-	-	-	-	-	-
Stage 2	188	615	-	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.4	4.12	-	-	-	-	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.48	2.218	-	-	-	-	-	-
Pot Cap-1 Maneuver	765	388	1016	965	-	0	0	-	-	-
Stage 1	988	866	-	-	-	0	0	-	-	-
Stage 2	844	482	-	-	-	0	0	-	-	-
Platoon blocked, %					-			-	-	-
Mov Cap-1 Maneuver	757	0	1016	965	-	-	-	-	-	-
Mov Cap-2 Maneuver	757	0	-	-	-	-	-	-	-	-
Stage 1	977	0	-	-	-	-	-	-	-	-
Stage 2	844	0	-	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.26	3.81	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBTWBLn1	SBT	SBR
Capacity (veh/h)	783	-	879	-
HCM Lane V/C Ratio	0.011	-	0.038	-
HCM Control Delay (s/veh)	8.8	0	9.3	-
HCM Lane LOS	A	A	A	-
HCM 95th %tile Q(veh)	0	-	0.1	-

HCM 7th TWSC
2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project 57% Volume Reduction
PM Peak Hour

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	10	10	0	0	0	0	10	10	179	10	0
Future Vol, veh/h	13	10	10	0	0	0	0	10	10	179	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	23	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	11	11	0	0	0	0	11	11	188	11	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	398	408	11				-	0	0	21	0	0
Stage 1	387	387	-				-	-	-	-	-	-
Stage 2	11	21	-				-	-	-	-	-	-
Critical Hdwy	6.63	6.52	6.22				-	-	-	4.12	-	-
Critical Hdwy Stg 1	5.63	5.52	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.63	5.52	-				-	-	-	-	-	-
Follow-up Hdwy	3.707	4.018	3.318				-	-	-	2.218	-	-
Pot Cap-1 Maneuver	569	532	1071				0	-	-	1595	-	0
Stage 1	643	609	-				0	-	-	-	-	0
Stage 2	960	878	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	501	0	1071				-	-	-	1595	-	-
Mov Cap-2 Maneuver	501	0	-				-	-	-	-	-	-
Stage 1	643	0	-				-	-	-	-	-	-
Stage 2	846	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s/v10.83							0		7.16			
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	652	1585	-						
HCM Lane V/C Ratio		-	-	0.053	0.118	-						
HCM Control Delay (s/veh)		-	-	10.8	7.6	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	0.2	0.4	-						

Queues

Ambient Plus Project Signal Control

1: Corn Springs Road & I-10 WB Ramps

AM Peak Hour



Lane Group	WBT	NBT	SBT
Lane Group Flow (vph)	440	972	30
v/c Ratio	0.85	0.88	0.04
Control Delay (s/veh)	34.4	21.8	3.6
Queue Delay	0.0	6.7	0.0
Total Delay (s/veh)	34.4	28.4	3.6
Queue Length 50th (ft)	123	291	2
Queue Length 95th (ft)	#283	#576	11
Internal Link Dist (ft)	214	218	142
Turn Bay Length (ft)			
Base Capacity (vph)	574	1336	991
Starvation Cap Reductn	0	315	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.77	0.95	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Corn Springs Road & I-10 WB Ramps

Ambient Plus Project Signal Control

AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	10	10	397	10	913	0	0	13	15
Future Volume (veh/h)	0	0	0	10	10	397	10	913	0	0	13	15
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1559	1411
Adj Flow Rate, veh/h				11	11	314	11	961	0	0	14	11
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	23	33
Cap, veh/h				13	13	369	67	1110	0	0	483	379
Arrive On Green				0.25	0.25	0.25	0.60	0.60	0.00	0.00	0.60	0.60
Sat Flow, veh/h				52	52	1494	7	1862	0	0	809	636
Grp Volume(v), veh/h				336	0	0	972	0	0	0	0	25
Grp Sat Flow(s),veh/h/ln				1599	0	0	1868	0	0	0	0	1445
Q Serve(g_s), s				11.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s				11.5	0.0	0.0	25.2	0.0	0.0	0.0	0.0	0.4
Prop In Lane				0.03		0.93	0.01		0.00	0.00		0.44
Lane Grp Cap(c), veh/h				395	0	0	1177	0	0	0	0	862
V/C Ratio(X)				0.85	0.00	0.00	0.83	0.00	0.00	0.00	0.00	0.03
Avail Cap(c_a), veh/h				486	0	0	1473	0	0	0	0	1091
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				20.7	0.0	0.0	9.8	0.0	0.0	0.0	0.0	4.8
Incr Delay (d2), s/veh				11.4	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				32.1	0.0	0.0	13.0	0.0	0.0	0.0	0.0	4.8
LnGrp LOS				C			B					A
Approach Vol, veh/h					336			972			25	
Approach Delay, s/veh					32.1			13.0			4.8	
Approach LOS					C			B			A	
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	38.9			38.9			18.7					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	43.5			43.5			17.5					
Max Q Clear Time (g_c+I1), s	27.2			2.4			13.5					
Green Ext Time (p_c), s	7.2			0.1			0.8					
Intersection Summary												
HCM 7th Control Delay, s/veh	17.7											
HCM 7th LOS	B											

Queues
2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project Signal Control
AM Peak Hour

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	983	22	25
v/c Ratio	0.84	0.09	0.19
Control Delay (s/veh)	13.0	18.3	26.8
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	13.0	18.3	26.8
Queue Length 50th (ft)	145	3	6
Queue Length 95th (ft)	277	22	29
Internal Link Dist (ft)	226	24	218
Turn Bay Length (ft)			
Base Capacity (vph)	1581	262	144
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.62	0.08	0.17
Intersection Summary			

HCM 7th Signalized Intersection Summary 2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project Signal Control
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	913	10	10	0	0	0	0	10	10	13	10	0
Future Volume (veh/h)	913	10	10	0	0	0	0	10	10	13	10	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	418	1870	0
Adj Flow Rate, veh/h	961	11	11				0	11	2	14	11	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	100	2	0
Cap, veh/h	1169	13	13				0	180	33	207	119	0
Arrive On Green	0.67	0.67	0.67				0.00	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1740	20	20				0	1540	280	640	1015	0
Grp Volume(v), veh/h	983	0	0				0	0	13	25	0	0
Grp Sat Flow(s),veh/h/ln	1780	0	0				0	0	1820	1656	0	0
Q Serve(g_s), s	17.3	0.0	0.0				0.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	17.3	0.0	0.0				0.0	0.0	0.3	0.5	0.0	0.0
Prop In Lane	0.98		0.01				0.00		0.15	0.56		0.00
Lane Grp Cap(c), veh/h	1196	0	0				0	0	213	325	0	0
V/C Ratio(X)	0.82	0.00	0.00				0.00	0.00	0.06	0.08	0.00	0.00
Avail Cap(c_a), veh/h	1855	0	0				0	0	277	381	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	0.0	0.0				0.0	0.0	16.8	16.9	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0				0.0	0.0	0.1	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0				0.0	0.0	0.1	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.9	0.0	0.0				0.0	0.0	16.9	17.0	0.0	0.0
LnGrp LOS	A								B	B		
Approach Vol, veh/h	983						13			25		
Approach Delay, s/veh	6.9						16.9			17.0		
Approach LOS	A						B			B		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	9.5			33.2			9.5					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	6.5			44.5			6.5					
Max Q Clear Time (g_c+l1), s	2.3			19.3			2.5					
Green Ext Time (p_c), s	0.0			9.4			0.0					
Intersection Summary												
HCM 7th Control Delay, s/veh	7.3											
HCM 7th LOS	A											

Queues

Ambient Plus Project Signal Control

1: Corn Springs Road & I-10 WB Ramps

PM Peak Hour



Lane Group	WBT	NBT	SBT
Lane Group Flow (vph)	36	27	1379
v/c Ratio	0.28	0.02	0.86
Control Delay (s/veh)	40.1	1.0	9.6
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	40.1	1.0	9.6
Queue Length 50th (ft)	14	2	114
Queue Length 95th (ft)	48	4	#649
Internal Link Dist (ft)	214	218	142
Turn Bay Length (ft)			
Base Capacity (vph)	127	1109	1598
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.28	0.02	0.86

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 7th Signalized Intersection Summary

1: Corn Springs Road & I-10 WB Ramps

Ambient Plus Project Signal Control

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	10	10	13	10	15	0	0	397	913
Future Volume (veh/h)	0	0	0	10	10	13	10	15	0	0	397	913
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1559	1870	1411	0	0	1870	1870
Adj Flow Rate, veh/h				11	11	2	11	16	0	0	418	925
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	23	2	33	0	0	2	2
Cap, veh/h				22	22	4	126	142	0	0	444	983
Arrive On Green				0.03	0.03	0.03	0.86	0.86	0.00	0.00	0.86	0.86
Sat Flow, veh/h				826	826	150	71	165	0	0	518	1146
Grp Volume(v), veh/h				24	0	0	27	0	0	0	0	1343
Grp Sat Flow(s),veh/h/ln				1802	0	0	236	0	0	0	0	1664
Q Serve(g_s), s				1.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	46.1
Cycle Q Clear(g_c), s				1.0	0.0	0.0	48.2	0.0	0.0	0.0	0.0	46.1
Prop In Lane				0.46		0.08	0.41		0.00	0.00		0.69
Lane Grp Cap(c), veh/h				47	0	0	268	0	0	0	0	1427
V/C Ratio(X)				0.51	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.94
Avail Cap(c_a), veh/h				119	0	0	340	0	0	0	0	1635
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				37.1	0.0	0.0	13.5	0.0	0.0	0.0	0.0	4.1
Incr Delay (d2), s/veh				8.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	10.4
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				45.5	0.0	0.0	13.6	0.0	0.0	0.0	0.0	14.5
LnGrp LOS				D			B					B
Approach Vol, veh/h					24			27			1343	
Approach Delay, s/veh					45.5			13.6			14.5	
Approach LOS					D			B			B	
Timer - Assigned Phs	2			6			8					
Phs Duration (G+Y+Rc), s	70.7			70.7			6.5					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	75.9			75.9			5.1					
Max Q Clear Time (g_c+I1), s	50.2			48.1			3.0					
Green Ext Time (p_c), s	0.2			18.2			0.0					
Intersection Summary												
HCM 7th Control Delay, s/veh	15.0											
HCM 7th LOS	B											

Queues
2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project Signal Control
PM Peak Hour

	→	↑	↓
Lane Group	EBT	NBT	SBT
Lane Group Flow (vph)	38	22	429
v/c Ratio	0.13	0.01	0.37
Control Delay (s/veh)	15.8	2.0	3.7
Queue Delay	0.0	0.0	0.0
Total Delay (s/veh)	15.8	2.0	3.7
Queue Length 50th (ft)	3	0	0
Queue Length 95th (ft)	29	6	98
Internal Link Dist (ft)	226	24	218
Turn Bay Length (ft)			
Base Capacity (vph)	831	1503	1153
Starvation Cap Reductn	0	0	68
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.05	0.01	0.40
Intersection Summary			

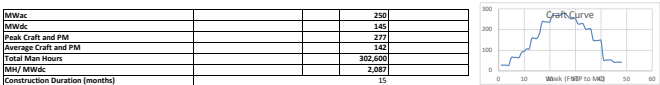
HCM 7th Signalized Intersection Summary 2: I-10 EB Ramps & Corn Springs Road

Ambient Plus Project Signal Control
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	10	10	0	0	0	0	10	10	397	10	0
Future Volume (veh/h)	15	10	10	0	0	0	0	10	10	397	10	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1411	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	16	11	2				0	11	9	418	11	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	33	2	2				0	2	2	2	2	0
Cap, veh/h	37	26	5				0	459	376	1030	22	0
Arrive On Green	0.04	0.04	0.04				0.00	0.48	0.48	0.48	0.48	0.00
Sat Flow, veh/h	992	682	124				0	952	779	1348	46	0
Grp Volume(v), veh/h	29	0	0				0	0	20	429	0	0
Grp Sat Flow(s),veh/h/ln	1798	0	0				0	0	1730	1395	0	0
Q Serve(g_s), s	0.3	0.0	0.0				0.0	0.0	0.1	4.2	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	0.0				0.0	0.0	0.1	4.3	0.0	0.0
Prop In Lane	0.55		0.07				0.00		0.45	0.97		0.00
Lane Grp Cap(c), veh/h	67	0	0				0	0	835	1052	0	0
V/C Ratio(X)	0.43	0.00	0.00				0.00	0.00	0.02	0.41	0.00	0.00
Avail Cap(c_a), veh/h	1735	0	0				0	0	2573	2460	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.8	0.0	0.0				0.0	0.0	2.5	3.6	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.0	0.0				0.0	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0				0.0	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	0.0	0.0				0.0	0.0	2.5	3.9	0.0	0.0
LnGrp LOS	B						A			A		
Approach Vol, veh/h	29						20			429		
Approach Delay, s/veh	13.1						2.5			3.9		
Approach LOS	B						A			A		
Timer - Assigned Phs	2			4			6					
Phs Duration (G+Y+Rc), s	13.6			5.2			13.6					
Change Period (Y+Rc), s	4.5			4.5			4.5					
Max Green Setting (Gmax), s	27.9			18.1			27.9					
Max Q Clear Time (g_c+l1), s	2.1			2.3			6.3					
Green Ext Time (p_c), s	0.1			0.1			2.7					
Intersection Summary												
HCM 7th Control Delay, s/veh	4.4											
HCM 7th LOS	A											

Appendix C: Detailed Trip Generation

Stage 1 - Mobilization, site prep, fencing, laydown, trenching		Stage 2 - Cable install, trench backfill, pile and racking install, inverter install, module install, bess install		Stage 3 - inverter, pile racking, module, bess install, commissioning/testing	
150		5		8	
HV WORK					
Savira - Riverside County, CA - PV: 126MWac; BESS: 250MWac/4hr - CRAFT ESTIMATE		MOBILIZATION		MC	
Construction Month		Month 1		Month 2	
Construction Week		Month 3		Month 4	
EPC		Month 5		Month 6	
HV		Month 7		Month 8	
BESS		Month 9		Month 10	
CEG		Month 11		Month 12	
Total Craft		Month 13		Month 14	
		Month 15		Month 16	
		Month 17		Month 18	
		Month 19		Month 20	
		Month 21		Month 22	
		Month 23		Month 24	
total craft		7565			
EQUIPMENT ESTIMATE					
Type of work	equipment	HP	hours/WEEK	Avg CTPY per week	
PV - General construction support	Skid Steer	73	20	3.1	
PV - general construction support	Welder	98	20	1.9	
PV - Site supervision	Pickup Truck (on-road)	33	20	1.5	
PV and HV - Site Clearing and Grading, Roads	Buildozer	215	35	1.7	
PV and HV - Site Clearing and Grading, Roads	Front End Loader	225	35	2.0	
PV and HV - Site Clearing and Grading, Roads	Grader	175	35	2.8	
PV and HV - Site Compaction	Roller Compactor	133	35	2.8	
PV - DC and AC Collection	Trencher	78	35	2.0	
PV - Material Receipt and Distribution / general support	Forklift	89	35	3.0	
PV - Pile Installation	Pile Driver	180	35	8.0	
PV - Backfill DC and AC trenches	Backhoe	127	35	2.0	
PV - Setting inverter equipment	Crane	81	20	1.0	
HV - Substation and Gen Tie	Aerial Lift	49	20	4.0	
HV - Foundation Excavation and trenching	Backhoe	127	35	2.0	
HV - Setting Equipment and poles	Crane	81	20	2.0	
HV - Site Supervision Trucks	Pickup Truck (on-road)	33	20	1.0	
HV - Material Receipt and Distribution	Forklift	89	20	1.0	
Material and Equipment Deliveries - PV			34		
total on site equipment of:		2256			
total material deliveries		865			
MWac:		250			
MWdc:		140			
Peak Craft and PM		277			
Average Craft and PM		140			
Total Man Hours		302,460			
MH/ MWdc:		2,087			
Construction Duration (months)		15			



Stage 1 - Mobilization, site prep, fencing, laydown, trenching, site civil		Stage 2 - Cable install, trench backfill, heavy civil, pile install, module install, bess install		Stage 3 - inverter, pile racking, module, bess install, commissioning/testing	
150		5		8	
HV WORK					
Redonda and Beldos - BLM - 600MWac/720MWdc		MOBILIZATION		MECHANICAL COMP	
Construction Month		Month 1		Month 2	
Construction Week		Month 3		Month 4	
EPC (24 months)		Month 5		Month 6	
HV (13 months)		Month 7		Month 8	
BESS (17 months)		Month 9		Month 10	
CEG (24 months)		Month 11		Month 12	
Total Craft		Month 13		Month 14	
		Month 15		Month 16	
		Month 17		Month 18	
		Month 19		Month 20	
		Month 21		Month 22	
		Month 23		Month 24	
total craft		41608			
EQUIPMENT ESTIMATE					
Type of work	equipment	HP	hours/week	Avg CTPY per week	
PV - General construction support	Skid Steer	73	20	1.1	
PV - general construction support	Welder	98	20	13.4	
PV - Site supervision	Pickup Truck (on-road)	33	20	2.0	
PV and HV - Site Clearing and Grading, Roads	Buildozer	215	35	17.7	
PV and HV - Site Clearing and Grading, Roads	Front End Loader	225	35	3.8	
PV and HV - Site Clearing and Grading, Roads	Grader	175	35	4.1	
PV and HV - Site Compaction	Roller Compactor	133	35	5.3	
PV - DC and AC Collection	Trencher	78	35	4.5	
PV - Material Receipt and Distribution / general support	Forklift	89	35	2.7	
PV - Pile Installation	Pile Driver	180	35	10.0	
PV - Backfill DC and AC trenches	Backhoe	127	35	1.0	
PV - Setting inverter equipment	Crane	81	20	0.9	
HV - Substation and Gen Tie	Aerial Lift	49	20	4.0	
HV - Foundation Excavation and trenching	Backhoe	127	35	3.0	
HV - Setting Equipment and poles	Crane	81	20	2.0	
HV - Site Supervision Trucks	Pickup Truck (on-road)	33	20	3.1	
HV - Material Receipt and Distribution	Forklift	89	20	1.0	
Material and Equipment Deliveries - PV			30		
total on site equipment of:		8780			
total material deliveries:		2460			
MWac:		600			
MWdc:		720			
Peak Craft and PM		1,095			
Average Craft and PM		430			
Total Man Hours		1,664,240			
MH/ MWdc:		2,311			
Construction Duration (months)		24			

