

NOVEMBER 2012

TRAFFIC IMPACT STUDY FOR THE

HARVEST – TULARE ANAEROBIC DIGESTER AND COMPRESSED NATURAL GAS FACILITY

PREPARED FOR



PREPARED BY



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TRAFFIC IMPACT STUDY

FOR THE

HARVEST-TULARE ANAEROBIC DIGESTER

AND COMPRESSED NATURAL GAS FACILITY

CHAPTER 1 – INTRODUCTION

This Traffic Impact Study (TIS) was prepared to assess the traffic impacts due to the proposed Harvest-Tulare Anaerobic Digester and Compressed Natural Gas Facility Project located in Tulare County. The approximate 35 acre proposed Project site is located south of Avenue 245. Road 140 is located approximately one quarter mile to the east of the site, while Avenues 240 and 248 are approximately one half mile to the south and north of the site, respectively.

The City of Tulare is approximately four (4) miles to the southwest of the site and the City of Visalia is located approximately 5 miles to the northwest of the proposed site. This study evaluates the impacts of the proposed development on adjacent intersection operations and provides an assessment of the Project driveway. Figure 1 shows the Project location.

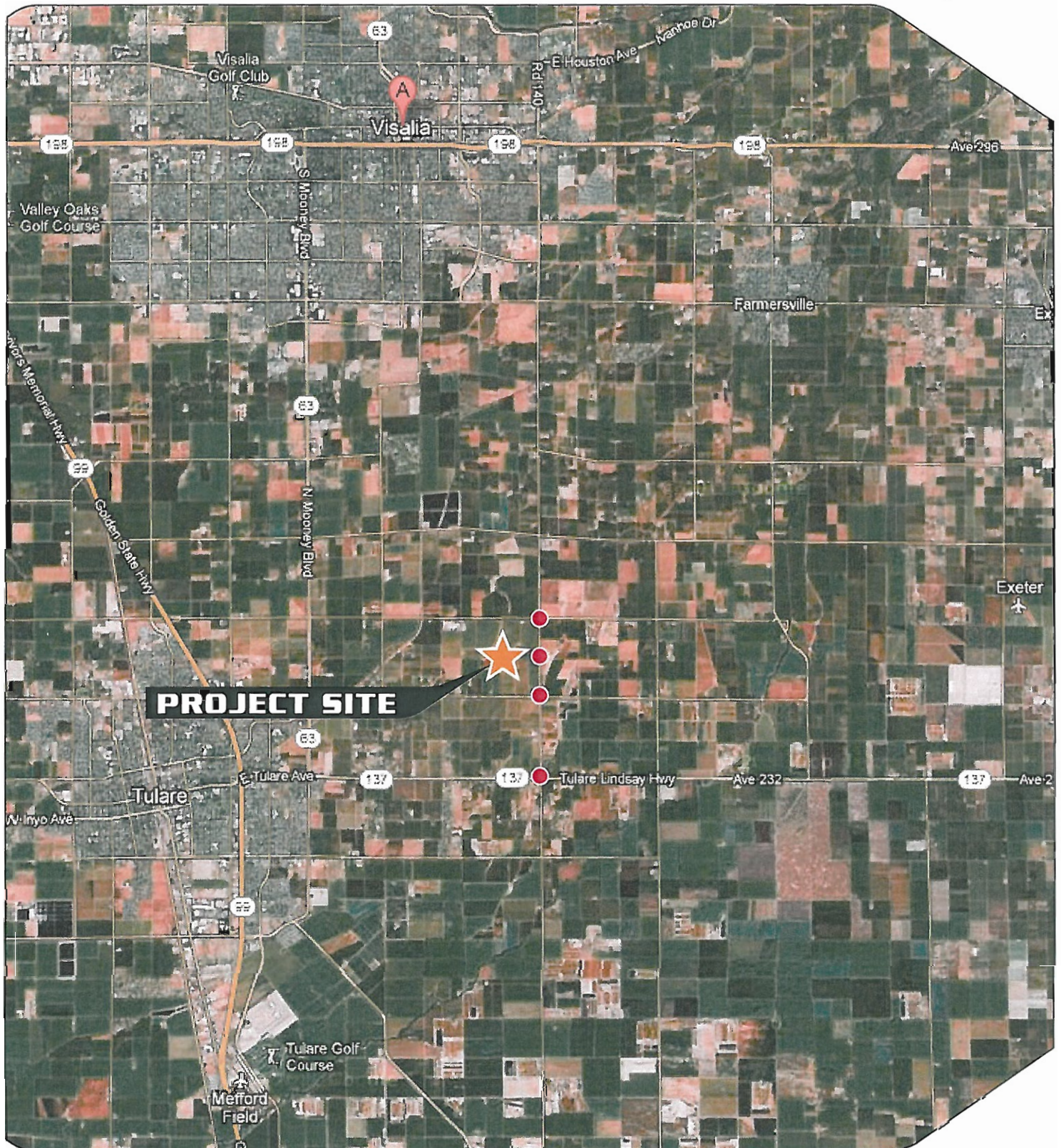


The Project study area for the analysis of traffic impacts falls along Lovers lane and includes four (4) intersections for two (2) time periods (weekday AM and PM peak hours). Intersection levels of service (LOS) were calculated using Synchro 7.0 and HCS software, which are an industry standards and is recognized for use in the County of Tulare. The Synchro 7.0 and HCS software are based on the 2010 Highway Capacity Manual (HCM 2000) methodology, which is also an industry standard. The analysis methodology used in this report is included in Appendix A.

To analyze the traffic impacts resulting from the build out of the Harvest-Tulare Anaerobic Digester and Compressed Natural Gas Facility Project, the following four (4) scenarios were evaluated:

- *Existing Traffic Conditions (2012)*
- *Existing Conditions Plus the Compost Project Traffic*
- *2035 Conditions Without the Compost Project Traffic*
- *2035 Conditions Plus the Compost Project Traffic*

Figure 1
Vicinity Map



Legend

● Study Intersections

tpg
consulting

Figure 2

Project Site Plan



Methodology

This Traffic Impact Study was prepared following a traditional methodology. In order to prepare a traffic evaluation, a variety of data and technical assumptions had to be developed. This section of the report describes the various sources, data and technical assumptions used in this evaluation.

Sources

This report was prepared using information taken from the following sources:

- *2010 Highway Capacity Manual (HCM 2010)*, Transportation Research Board, 2010.
- *2002 Quality/Level of Service Handbook*, Florida Department of Transportation, 2002.
- *Guide for the Preparation of Traffic Impact Studies*, State of California Department of Transportation, December, 2002.
- *Synchro 7.0*, Trafficware, 2007.
- *Traffic Impact Analysis for Site Development*, A Recommended Practice, ITE, Transportation Planners Council Task Force on Traffic Access/Impact Studies, 2006.
- *Trip Generation*, 8th Edition, Volume 2, ITE, 2008.
- *Trip Generation* (software), Version 6, Microtrans, 2008.

Scenarios

The scenarios that were analyzed for this study included:

- Existing Traffic Conditions
- Existing Plus the Project Traffic Conditions
- 2035 WITHOUT the Project Traffic Conditions
- 2035 WITH the Project Traffic Conditions

The 2035 WITHOUT the Project and 2035 WITH the Project scenarios reflect cumulative conditions analysis as required by CEQA.

Study Locations

The following intersections were analyzed:

1. Lovers Lane at SR 137
2. Lovers Lane at Avenue 240
3. Lovers Lane at Project Driveway
4. Lovers Lane at Avenue 248

Analysis Time Periods

According to *Traffic Impact Analyses for Site Development*, the overall purpose of a traffic impact study is to determine the project impacts that are likely to occur to the surrounding street system. In order to accomplish this purpose you need to determine what occurs when the peak of the project generated traffic overlays the peak of the street traffic. *Traffic Impact Analyses for Site Development* states “the peak periods [of the adjacent street and highway system] are generally the weekday morning (7-9 a.m.) and evening (4-6 p.m.) peak hours, although local area characteristics occasionally result in other peaks (e.g., at major shopping or recreational centers)”. The peak hours analyzed in this study were:

- 7:00 to 9:00 AM
- 4:00 to 6:00 PM

The traffic analysis time periods are the typical AM and PM peak hours as shown above.

Traffic Counts

According to the Caltrans *Guide for the Preparation of Traffic Impact Studies*, one of the common rules for counting vehicular traffic is:

“Vehicle counts should be conducted on Tuesdays, Wednesdays, or Thursdays during weeks not containing a holiday and conducted in favorable weather conditions.”¹

Traffic counts were conducted during the week of June 26, 27 & 28, 2012.

Traffic Model

The Model was used in this study to develop the following pieces of information:

- 2035 No Project background traffic volumes

Copies of the Model plots are included in Appendix C.

Intersection Analysis and Volume Adjustments

Intersection heavy vehicle percentages were developed from the Existing conditions count data. Heavy vehicle percentages used in the analysis were the *HCM 2000* 10% default. These percentages were used in all scenarios.

Traffic Signal Analysis

All signalized intersections were optimized to achieve the greatest reduction in overall intersection delay in the 2035 scenarios.

Level of Service Analysis Methods

Unsignalized and signalized intersection analyses were completed using *Synchro 7.0*, which incorporates the *HCM 2010* methodologies. *Synchro 7.0* allows for optimization of signals to provide for the greatest reduction in overall intersection delay. This optimization process can result in different signal cycle lengths for both the AM and PM peak hours of a given scenario and across all scenarios. The changing of the signal cycle length somewhat reflects the agency process whereby the agency will adjust intersection signal cycle lengths for differing traffic conditions based on current count data.

Level of Service

For analysis purposes, the *HCM 2010* defines six levels of service for various facility types. The six levels are given letter designations ranging from “A” to “F”, with “A” representing the best operating conditions and “F” the worst. Quantifiable measures of effectiveness that best describe the quality of operation on the subject facility type are used to determine the facilities level of service. For segments, the quantifiable measure of effectiveness is volume to capacity measurements. For signalized and unsignalized intersections, the quantifiable measure of effectiveness is average control delay.²

Control delay for two-way stop-controlled (TWSC) intersections, which have stop signs on only the minor street approaches, is per vehicle and is computed for the stop-controlled or minor street movements only since theoretically the through movements on the major street are not experiencing any delay. Since there is no aggregation of delay for a TWSC intersection, there is no intersection level of service as a whole, only levels of service for the individual minor movements. The minor

¹ *Guide for the Preparation of Traffic Impact Studies*, State of California Department of Transportation, December 2002, page 4.

² Control delay, according to the *2010 Highway Capacity Manual*, page 16-1, includes initial acceleration delay, queue move-up time, stopped delay, and final acceleration delay.

movements generally consist of separate lefts on the major street approaches and all movements on both minor street approaches.

The table below shows the six levels of service and their corresponding ranges of average control delay for both signalized and unsignalized intersections. It also contains a brief traffic flow description for signalized intersections for each level of service category. The level of service diagrams provided throughout the report show the levels of service for the study intersections. The levels of service shown for signalized intersections are representative of the overall level of service for that intersection. For stop-controlled intersections, the level of service shown is the level of service for the specific movements as opposed to the overall intersection level of service.

| INTERSECTION LEVEL OF SERVICE DESCRIPTION | | | Intersections | |
|---|----------------------|---|-----------------|---------------------------|
| | | | Signalized | Unsignalized ¹ |
| Level of Service | Conditions | Signalized Intersection Description | Delay (sec/veh) | Delay (sec/veh) |
| "A" | Free Flow | <i>Users experience very low delay. Progression is favorable and most vehicles do not stop at all.</i> | ≤10.0 | ≤10.0 |
| "B" | Stable Operations | <i>Vehicles travel with good progression. Some vehicles stop, causing slight delay.</i> | >10.0 – 20.0 | >10.0 – 15.0 |
| "C" | Stable Operations | <i>Higher delays result from fair progression. A significant number of vehicles stop, although many continue to pass through the intersection without stopping.</i> | >20.0 to 35.0 | >15.0 – 25.0 |
| "D" | Approaching Unstable | <i>Congestion is noticeable. Progression is unfavorable, with more vehicles stopping rather than passing through the intersection.</i> | >35.0 – 55.0 | >25.0 – 35.0 |
| "E" | Unstable Operations | <i>Traffic volumes are at capacity. Users experience poor progression and long delays.</i> | >55.0 – 80.0 | >35.0 – 50.0 |
| "F" | Forced Flow | <i>Intersection's capacity is oversaturated, causing poor progression and unusually long delays.</i> | >80.0 | >50.0 |

Source: 2000 Highway Capacity Manual, Transportation Research Board.

¹ Unsignalized intersections include TWSC and AWSC

CHAPTER 2 – EXISTING CONDITIONS

Roadways

Table 1 describes the existing street system in the study area including the street classification, number of lanes and the posted speed limits.

| TABLE 1: DESCRIPTION OF EXISTING STREET SYSTEM | | | |
|---|-------------------|-------------------------|-----------------------------|
| Street | Classification | No. of Lanes (2-dir) | Posted Speed Limit (mph) |
| Lovers Lane | Regional Arterial | 2 | 25 ¹ -55 |
| State Route 137 | Regional Arterial | 2 | 55 |
| Road 240 | | 2 | 25 ¹ -55 |
| Road 248 | | 2 | 55 |

¹ posted 25 mph school zone for portions of the study segments

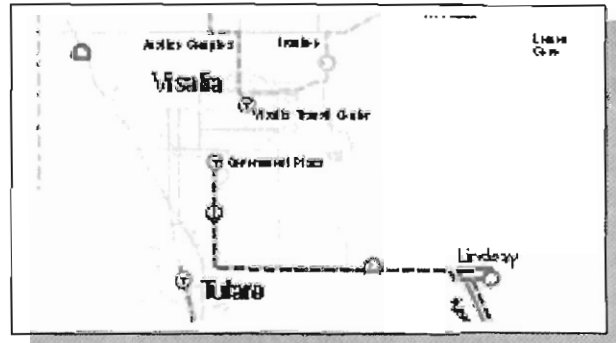
Table 2 lists the study intersections and their associated intersection control.

| TABLE 2: EXISTING INTERSECTION CONTROL | |
|---|----------------|
| Intersection | Control Type |
| Lovers Lane at SR 137 | Traffic Signal |
| Lovers Lane at Road 240 | 2-Way Stop |
| Lovers Lane at Project Driveway | 2-Way Stop |
| Lovers Lane at Road 248 | 2-Way Stop |

Transit

Currently, Tulare County Area Transit does not provide direct service to the Project site. Route 40 currently operates between Visalia and Porterville along State Route 137, which is 1.5 miles to the south of the project site.

Visalia Transit's Route 12 provides service between Visalia-Farmersville-Exeter via Caldwell Avenue, which is slightly over 4 miles north of the project site.



Bicycle Facilities

There are no bicycle facilities along any of the study roadways. State Highway 137 is designated by Caltrans as an unsigned and unmarked bike route.

Pedestrian Facilities

Currently, due to the rural nature of the area no sidewalks or crosswalks exist along any of the study roadways.

Level of Service Standards

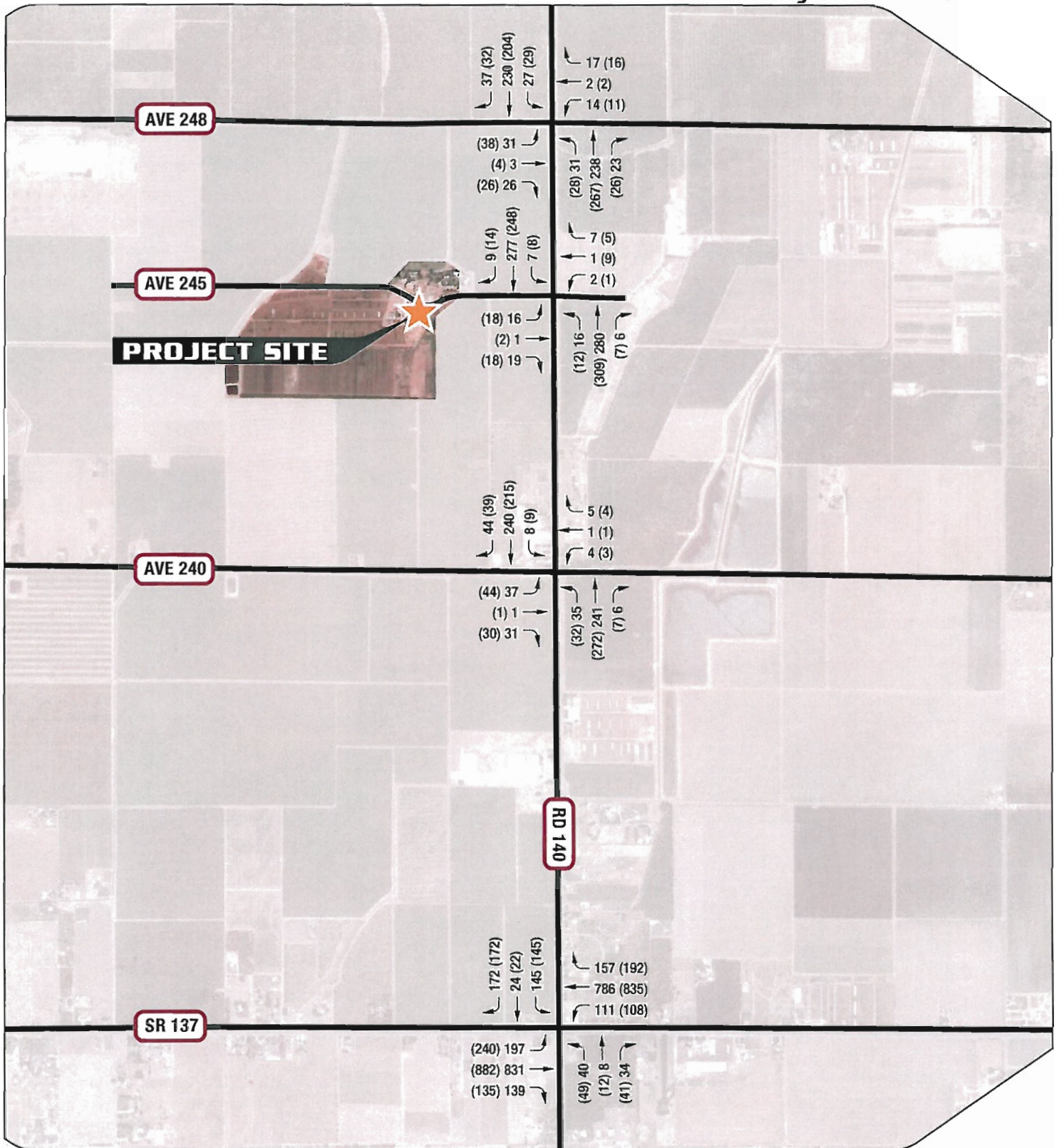
The County of Tulare strives to meet LOS "D" or better on all roadways. This standard will apply to all intersections along Lovers Lane.



Figure 8

traffic impact study

2035 Traffic Volumes
without the Project



CHAPTER 6 – 2035 CONDITIONS PLUS THE HARVEST-TULARE FACILITY PROJECT

The evaluation of the 2035 Conditions WITH the Harvest-Tulare Project scenario was prepared to address future conditions with the construction of the proposed Project. The 2035 WITH Project traffic volumes were developed using the existing traffic counts and the Tulare County Association of Governments traffic model volumes. Using peak hour traffic volumes developed for the 2035 baseline and adding Project trips to the study area intersections yielded 2035 peak hour traffic volumes with the Project completed. This scenario represents a “cumulative” plus project assessment.

Level of Service

The 2035 WITH the Project intersection lane configurations are the same as those shown in Figure 7. Future peak hour traffic volumes with the Harvest-Tulare Project are shown on Figure 9. The intersections were analyzed for the 2035 WITH the Project levels of service. Table 6 shows the 2035 WITHOUT the Project levels of service for the study intersections. The signalized intersection levels of service shown are representative of the whole intersection, individual intersection movements are shown for the 2-way stop controlled locations. The 2035 WITHOUT the Project calculations of levels of service are included in Appendix E.

| TABLE 6: 2035 CONDITIONS WITH THE HARVEST-TULARE PROJECT - LEVELS OF SERVICE | | | | |
|---|--------------|--------------------|--------------|--------------------|
| Intersection | AM Peak Hour | | PM Peak Hour | |
| | LOS | Delay ¹ | LOS | Delay ¹ |
| Lovers Lane at SR 137 | B | 10.8 | B | 11.6 |
| Lovers Lane at Road 240 | | | | |
| <i>Northbound Approach</i> | A | 8.0 | A | 7.9 |
| <i>Southbound Approach</i> | A | 7.8 | A | 7.9 |
| <i>Westbound Approach</i> | B | 12.2 | B | 12.0 |
| <i>Eastbound Approach</i> | B | 13.3 | B | 13.6 |
| Lovers Lane at Project Driveway | | | | |
| <i>Northbound Approach</i> | A | 8.0 | A | 7.9 |
| <i>Southbound Approach</i> | A | 7.9 | A | 8.0 |
| <i>Westbound Approach</i> | B | 11.3 | B | 12.9 |
| <i>Eastbound Approach</i> | B | 12.4 | B | 12.7 |
| Lovers Lane at Road 248 | | | | |
| <i>Northbound Approach</i> | A | 8.0 | A | 7.9 |
| <i>Southbound Approach</i> | A | 7.9 | A | 8.0 |
| <i>Westbound Approach</i> | B | 12.8 | B | 12.6 |
| <i>Eastbound Approach</i> | B | 13.7 | B | 14.2 |

¹ delay in seconds per vehicle

All study area intersections are projected to operate above the adopted County or Caltrans level of service standards in 2035 with the additional traffic expected from the Harvest-Tulare Facility Project.



CHAPTER 7 – CONCLUSIONS

As previously discussed and as shown below, all study area intersections are or are projected to operate well above the appropriate level of service standard. This condition will be true with and without the Harvest-Tulare Project traffic in both the short term and cumulative scenarios. The following table summarizes the levels of service for each of the four scenarios evaluated as part of this study.

| TABLE 7: SUMMARY FOR LEVELS OF SERVICE | | | | | | | | |
|---|-----------|--------------------------|---------------------------|-----------------------|--------------------------|--------------------------|-----------------------|--------------------------|
| Intersection | Existing | | Existing Plus the Project | | 2035 Without the Project | | 2035 WITH the Project | |
| | LOS AM/PM | Delay ¹ AM/PM | LOS AM/PM | Delay ¹ PM | LOS AM/PM | Delay ¹ AM/PM | LOS AM/PM | Delay ¹ AM/PM |
| Lovers Lane at SR 137 | A/A | 8.5/8.6 | A/A | 8.5/8.6 | A/A | 9.3/10.1 | A/A | 9.3/10.2 |
| Lovers Lane at Road 240 | | | | | | | | |
| NB Approach | A/A | 7.8/7.8 | A/A | 7.8/7.8 | A/A | 8.0/7.9 | A/A | 8.0/7.9 |
| SB Approach | A/A | 7.6/7.7 | A/A | 7.6/7.7 | A/A | 7.8/7.9 | A/A | 7.9/7.9 |
| WB Approach | B/B | 11.7/12.1 | B/B | 11.8/12.2 | B/B | 12.2/12.0 | B/B | 12.2/12.0 |
| EB Approach | B/B | 11.3/12.5 | B/B | 11.3/12.6 | B/B | 13.3/13.6 | B/B | 13.3/13.7 |
| Lovers Lane at Project Drive | | | | | | | | |
| NB Approach | A/A | 7.8/7.7 | A/A | 7.7/7.7 | A/A | 8.0/7.9 | A/A | 8.0/7.9 |
| SB Approach | A/A | 7.6/7.8 | A/A | 7.6/7.8 | A/A | 7.9/8.0 | A/A | 7.9/8.0 |
| WB Approach | A/B | 9.5/11.2 | A/B | 9.5/11.4 | B/B | 11.2/12.8 | B/B | 11.3/13.0 |
| EB Approach | A/B | 9.8/10.7 | A/B | 10.1/10.8 | B/B | 12.4/12.6 | B/B | 12.7/12.9 |
| Lovers Lane at Road 248 | | | | | | | | |
| NB Approach | A/A | 7.7/7.8 | A/A | 7.6/7.8 | A/A | 7.9/7.9 | A/A | 8.0/7.9 |
| SB Approach | A/A | 7.6/7.8 | A/A | 7.6/7.8 | A/A | 7.9/8.0 | A/A | 7.9/8.0 |
| WB Approach | B/B | 11.1/12.7 | B/B | 11.0/12.8 | B/B | 12.7/12.5 | B/B | 12.8/12.6 |
| EB Approach | A/B | 9.9/13.4 | A/B | 9.9/13.5 | B/B | 13.7/14.1 | B/B | 13.8/14.3 |

Project Mitigations

The Project will have no significant impact on the existing or future levels of service. Therefore, no mitigation will be required.

APPENDIX A























EXISTING CONDITIONS

INTERSECTION LEVELS OF SERVICE CALCULATIONS

Lanes, Volumes, Timings

3: Int













7/12/2012

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  | |  |  | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | 0.985 | | | 0.924 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 1835 | 0 | 1770 | 1721 | 0 |
| Flt Permitted | 0.593 | | | 0.584 | | | 0.663 | | | 0.676 | | |
| Satd. Flow (perm) | 1105 | 1863 | 1583 | 1088 | 1863 | 1583 | 1235 | 1835 | 0 | 1259 | 1721 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 12 | | | 77 | | 13 | | | 75 | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 2903 | | | 3161 | | | 2528 | | | 1984 | |
| Travel Time (s) | | 66.0 | | | 71.8 | | | 57.5 | | | 45.1 | |
| Volume (vph) | 48 | 248 | 11 | 11 | 242 | 71 | 30 | 104 | 12 | 67 | 67 | 69 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 52 | 270 | 12 | 12 | 263 | 77 | 33 | 113 | 13 | 73 | 73 | 75 |
| Lane Group Flow (vph) | 52 | 270 | 12 | 12 | 263 | 77 | 33 | 126 | 0 | 73 | 148 | 0 |
| Turn Type | Perm | | Perm | Perm | | Perm | Perm | | | Perm | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | 6 | | |
| Detector Phases | 4 | 4 | 4 | 8 | 8 | 8 | 2 | 2 | | 6 | 6 | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 0.0 | 20.0 | 20.0 | 0.0 |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% |
| Maximum Green (s) | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | | 16.0 | 16.0 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | | 0.5 | 0.5 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | Max | Max | | Max | Max | |
| Walk Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 19.6 | 19.6 | | 19.6 | 19.6 | |
| Actuated g/C Ratio | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.56 | 0.56 | | 0.56 | 0.56 | |
| v/c Ratio | 0.17 | 0.51 | 0.03 | 0.04 | 0.50 | 0.15 | 0.05 | 0.12 | | 0.10 | 0.15 | |
| Uniform Delay, d1 | 10.5 | 11.7 | 0.0 | 10.1 | 11.7 | 0.0 | 4.1 | 3.8 | | 4.2 | 2.0 | |
| Control Delay | 9.2 | 11.4 | 4.8 | 8.1 | 11.3 | 3.3 | 6.6 | 6.2 | | 6.9 | 4.3 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.2 | 11.4 | 4.8 | 8.1 | 11.3 | 3.3 | 6.6 | 6.2 | | 6.9 | 4.3 | |
| LOS | A | B | A | A | B | A | A | A | | A | A | |
| Approach Delay | | 10.8 | | | 9.4 | | | 6.3 | | | 5.2 | |

Lanes, Volumes, Timings

3: Int

7/12/2012

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Approach LOS | B | | | A | | | A | | | A | | |

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 34.7

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 8.5

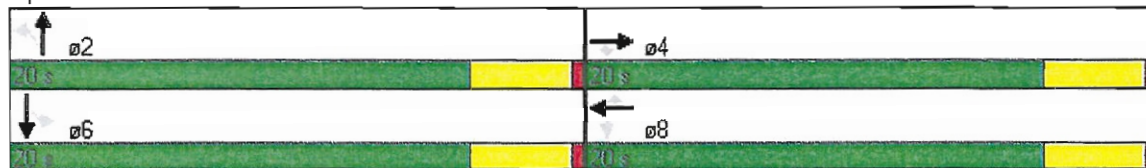
Intersection Capacity Utilization 40.8%

Analysis Period (min) 15

Intersection LOS: A























ICU Level of Service A









Splits and Phases: 3: Int



SR 137 at Lovers Ln (Rd 140)

S:\Projects\12-1273 Tul Co Compost TIS\Calcs\existing SR 137 at Lovers (pm).sy7 7/12/2012

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  | |  |  | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | | 50 | 50 | |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | 0.980 | | | 0.929 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 1825 | 0 | 1770 | 1730 | 0 |
| Flt Permitted | 0.597 | | | 0.558 | | | 0.666 | | | 0.693 | | |
| Satd. Flow (perm) | 1112 | 1863 | 1583 | 1039 | 1863 | 1583 | 1241 | 1825 | 0 | 1291 | 1730 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 20 | | | 93 | | 13 | | | 68 | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 2903 | | | 3161 | | | 2528 | | | 1984 | |
| Travel Time (s) | | 66.0 | | | 71.8 | | | 57.5 | | | 45.1 | |
| Volume (vph) | 63 | 269 | 18 | 11 | 239 | 86 | 12 | 79 | 12 | 79 | 69 | 63 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 68 | 292 | 20 | 12 | 260 | 93 | 13 | 86 | 13 | 86 | 75 | 68 |
| Lane Group Flow (vph) | 68 | 292 | 20 | 12 | 260 | 93 | 13 | 99 | 0 | 86 | 143 | 0 |
| Turn Type | Perm | | Perm | Perm | | Perm | Perm | | | Perm | | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | 6 | | |
| Detector Phases | 4 | 4 | 4 | 8 | 8 | 8 | 2 | 2 | | 6 | 6 | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 0.0 | 20.0 | 20.0 | 0.0 |
| Total Split (%) | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 0.0% | 50.0% | 50.0% | 0.0% |
| Maximum Green (s) | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | | 16.0 | 16.0 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | | 0.5 | 0.5 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | Max | Max | | Max | Max | |
| Walk Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 10.8 | 19.5 | 19.5 | | 19.5 | 19.5 | |
| Actuated g/C Ratio | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.56 | 0.56 | | 0.56 | 0.56 | |
| v/c Ratio | 0.21 | 0.53 | 0.04 | 0.04 | 0.48 | 0.18 | 0.02 | 0.10 | | 0.12 | 0.14 | |
| Uniform Delay, d1 | 10.5 | 11.7 | 0.0 | 10.0 | 11.4 | 0.0 | 4.2 | 3.7 | | 4.4 | 2.3 | |
| Control Delay | 9.5 | 11.6 | 4.3 | 8.0 | 11.1 | 3.1 | 6.7 | 6.2 | | 7.2 | 4.6 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.5 | 11.6 | 4.3 | 8.0 | 11.1 | 3.1 | 6.7 | 6.2 | | 7.2 | 4.6 | |
| LOS | A | B | A | A | B | A | A | A | | A | A | |
| Approach Delay | | 10.9 | | | 8.9 | | | 6.3 | | | 5.6 | |

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Approach LOS | B | | | A | | | A | | | A | | |

Intersection Summary

Area Type: Other

Cycle Length: 40

Actuated Cycle Length: 34.8

Natural Cycle: 40

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 8.6

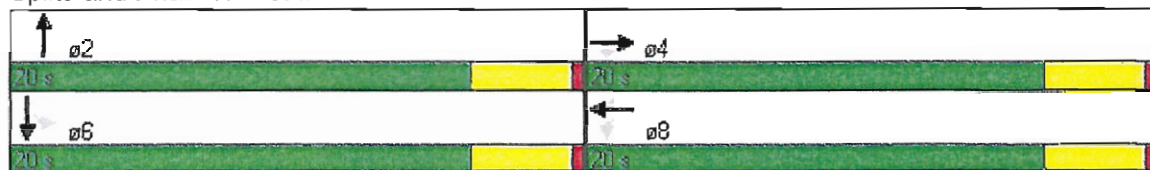
Intersection Capacity Utilization 38.5%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 3: Int



| TWO-WAY STOP CONTROL SUMMARY | | | | | | | | |
|--|------------------|------------|-----------|---------------------------------|----------------------------|-----------|------|----|
| General Information | | | | Site Information | | | | |
| Analyst | C. Clouse | | | Intersection | Lovers (Rd 140) at Ave 240 | | | |
| Agency/Co. | Tul. Co. Compost | | | Jurisdiction | Tulare County | | | |
| Date Performed | 7/12/2012 | | | Analysis Year | 2012 | | | |
| Analysis Time Period | AM Peak | | | | | | | |
| Project Description 12-1273 | | | | | | | | |
| East/West Street: Ave. 240 | | | | North/South Street: Lovers Lane | | | | |
| Intersection Orientation: North-South | | | | Study Period (hrs): 1.00 | | | | |
| Vehicle Volumes and Adjustments | | | | | | | | |
| Major Street | Northbound | | | Southbound | | | | |
| Movement | 1 | 2 | 3 | 4 | 5 | 6 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 19 | 126 | 1 | 4 | 176 | 42 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 19 | 126 | 1 | 4 | 176 | 42 | | |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- | | |
| Median Type | Undivided | | | | | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 | | |
| Configuration | L | | TR | L | | TR | | |
| Upstream Signal | | 0 | | | 0 | | | |
| Minor Street | Eastbound | | | Westbound | | | | |
| Movement | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 16 | 11 | 11 | 3 | 12 | 1 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 16 | 11 | 11 | 3 | 12 | 1 | | |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 | | |
| Percent Grade (%) | 0 | | | 0 | | | | |
| Flared Approach | | N | | | N | | | |
| Storage | | 0 | | | 0 | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | | |
| Configuration | | LTR | | | LTR | | | |
| Delay, Queue Length, and Level of Service | | | | | | | | |
| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | L | | LTR | | | LTR | |
| v (veh/h) | 19 | 4 | | 16 | | | 38 | |
| C (m) (veh/h) | 1305 | 1411 | | 553 | | | 613 | |
| v/c | 0.01 | 0.00 | | 0.03 | | | 0.06 | |
| 95% queue length | 0.04 | 0.01 | | 0.09 | | | 0.20 | |
| Control Delay (s/veh) | 7.8 | 7.6 | | 11.7 | | | 11.3 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 11.7 | | | 11.3 | | |
| Approach LOS | -- | -- | B | | | B | | |

| TWO-WAY STOP CONTROL SUMMARY | | | | | | | | |
|--|------------------|------------|-----------|------------|---------------------------------|----------------------------|------|----|
| General Information | | | | | Site Information | | | |
| Analyst | C. Clouse | | | | Intersection | Lovers (Rd 140) at Ave 240 | | |
| Agency/Co. | Tul. Co. Compost | | | | Jurisdiction | Tulare County | | |
| Date Performed | 7/12/2012 | | | | Analysis Year | 2012 | | |
| Analysis Time Period | PM Peak | | | | | | | |
| Project Description 12-1273 | | | | | | | | |
| East/West Street: Ave. 240 | | | | | North/South Street: Lovers Lane | | | |
| Intersection Orientation: North-South | | | | | Study Period (hrs): 1.00 | | | |
| Vehicle Volumes and Adjustments | | | | | | | | |
| Major Street | Northbound | | | Southbound | | | | |
| Movement | 1 | 2 | 3 | 4 | 5 | 6 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 30 | 186 | 2 | 2 | 149 | 42 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 30 | 186 | 2 | 2 | 149 | 42 | | |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- | | |
| Median Type | Undivided | | | | | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 | | |
| Configuration | L | | TR | L | | TR | | |
| Upstream Signal | | 0 | | | 0 | | | |
| Minor Street | Eastbound | | | Westbound | | | | |
| Movement | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 48 | 22 | 31 | 0 | 11 | 1 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 48 | 22 | 31 | 0 | 11 | 1 | | |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 | | |
| Percent Grade (%) | 0 | | | 0 | | | | |
| Flared Approach | | N | | | N | | | |
| Storage | | 0 | | | 0 | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | | |
| Configuration | | LTR | | | LTR | | | |
| Delay, Queue Length, and Level of Service | | | | | | | | |
| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | L | | LTR | | | LTR | |
| v (veh/h) | 30 | 2 | | 12 | | | 101 | |
| C (m) (veh/h) | 1336 | 1339 | | 519 | | | 583 | |
| v/c | 0.02 | 0.00 | | 0.02 | | | 0.17 | |
| 95% queue length | 0.07 | 0.00 | | 0.07 | | | 0.63 | |
| Control Delay (s/veh) | 7.8 | 7.7 | | 12.1 | | | 12.5 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 12.1 | | | 12.5 | | |
| Approach LOS | -- | -- | B | | | B | | |

| TWO-WAY STOP CONTROL SUMMARY | | | | | | | |
|--|------------------|------------|-----------|---------------------------------|----------------------------|-----------|----|
| General Information | | | | Site Information | | | |
| Analyst | C. Clouse | | | Intersection | Lovers (Rd 140) at Ave 248 | | |
| Agency/Co. | Tul. Co. Compost | | | Jurisdiction | Tulare County | | |
| Date Performed | 7/12/2012 | | | Analysis Year | 2012 | | |
| Analysis Time Period | AM Peak | | | | | | |
| Project Description 12-1273 | | | | | | | |
| East/West Street: Ave. 248 | | | | North/South Street: Lovers Lane | | | |
| Intersection Orientation: North-South | | | | Study Period (hrs): 1.00 | | | |
| Vehicle Volumes and Adjustments | | | | | | | |
| Major Street | Northbound | | | Southbound | | | |
| Movement | 1 | 2 | 3 | 4 | 5 | 6 | |
| | L | T | R | L | T | R | |
| Volume (veh/h) | 3 | 125 | 4 | 2 | 151 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Hourly Flow Rate, HFR (veh/h) | 3 | 125 | 4 | 2 | 151 | 43 | |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- | |
| Median Type | Undivided | | | | | | |
| RT Channelized | | | 0 | | | 0 | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | |
| Configuration | LTR | | | LTR | | | |
| Upstream Signal | | 0 | | | 0 | | |
| Minor Street | Eastbound | | | Westbound | | | |
| Movement | 7 | 8 | 9 | 10 | 11 | 12 | |
| | L | T | R | L | T | R | |
| Volume (veh/h) | 8 | 4 | 22 | 12 | 6 | 1 | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Hourly Flow Rate, HFR (veh/h) | 8 | 4 | 22 | 12 | 6 | 1 | |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 | |
| Percent Grade (%) | 0 | | | 0 | | | |
| Flared Approach | | N | | | N | | |
| Storage | | 0 | | | 0 | | |
| RT Channelized | | | 0 | | | 0 | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | |
| Configuration | | LTR | | | LTR | | |
| Delay, Queue Length, and Level of Service | | | | | | | |
| Approach | Northbound | Southbound | Westbound | | | Eastbound | |
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 |
| Lane Configuration | LTR | LTR | LTR | | | LTR | |
| v (veh/h) | 3 | 2 | 19 | | | 34 | |
| C (m) (veh/h) | 1333 | 1409 | 605 | | | 762 | |
| v/c | 0.00 | 0.00 | 0.03 | | | 0.04 | |
| 95% queue length | 0.01 | 0.00 | 0.10 | | | 0.14 | |
| Control Delay (s/veh) | 7.7 | 7.6 | 11.1 | | | 9.9 | |
| LOS | A | A | B | | | A | |
| Approach Delay (s/veh) | -- | -- | 11.1 | | | 9.9 | |
| Approach LOS | -- | -- | B | | | A | |

| TWO-WAY STOP CONTROL SUMMARY | | | | | | | | |
|--|------------------|------------|-----------|------------|---------------------------------|----------------------------|------|----|
| General Information | | | | | Site Information | | | |
| Analyst | C. Clouse | | | | Intersection | Lovers (Rd 140) at Ave 248 | | |
| Agency/Co. | Tul. Co. Compost | | | | Jurisdiction | Tulare County | | |
| Date Performed | 7/12/2012 | | | | Analysis Year | 2012 | | |
| Analysis Time Period | PM Peak | | | | | | | |
| Project Description 12-1273 | | | | | | | | |
| East/West Street: Ave. 248 | | | | | North/South Street: Lovers Lane | | | |
| Intersection Orientation: North-South | | | | | Study Period (hrs): 1.00 | | | |
| Vehicle Volumes and Adjustments | | | | | | | | |
| Major Street | Northbound | | | Southbound | | | | |
| Movement | 1 | 2 | 3 | 4 | 5 | 6 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 12 | 206 | 4 | 7 | 192 | 43 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 12 | 206 | 4 | 7 | 192 | 43 | | |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- | | |
| Median Type | Undivided | | | | | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | | |
| Configuration | LTR | | | LTR | | | | |
| Upstream Signal | | 0 | | | 0 | | | |
| Minor Street | Eastbound | | | Westbound | | | | |
| Movement | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 41 | 20 | 11 | 16 | 22 | 9 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 41 | 20 | 11 | 16 | 22 | 9 | | |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 | | |
| Percent Grade (%) | 0 | | | 0 | | | | |
| Flared Approach | | N | | | N | | | |
| Storage | | 0 | | | 0 | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | | |
| Configuration | | LTR | | | LTR | | | |
| Delay, Queue Length, and Level of Service | | | | | | | | |
| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | LTR | LTR | | LTR | | | LTR | |
| v (veh/h) | 12 | 7 | | 47 | | | 72 | |
| C (m) (veh/h) | 1287 | 1314 | | 514 | | | 502 | |
| v/c | 0.01 | 0.01 | | 0.09 | | | 0.14 | |
| 95% queue length | 0.03 | 0.02 | | 0.30 | | | 0.50 | |
| Control Delay (s/veh) | 7.8 | 7.8 | | 12.7 | | | 13.4 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 12.7 | | | 13.4 | | |
| Approach LOS | -- | -- | B | | | B | | |

| TWO-WAY STOP CONTROL SUMMARY | | | | | | | | |
|--|------------------|------------|-----------|------------|---------------------------------|-------------------------------|----|----|
| General Information | | | | | Site Information | | | |
| Analyst | C. Clouse | | | | Intersection | Lovers (Rd 140) at Proj Drive | | |
| Agency/Co. | Tul. Co. Compost | | | | Jurisdiction | Tulare County | | |
| Date Performed | 7/12/2012 | | | | Analysis Year | 2012 | | |
| Analysis Time Period | AM Peak | | | | | | | |
| Project Description 12-1273 | | | | | | | | |
| East/West Street: Project Driveway | | | | | North/South Street: Lovers Lane | | | |
| Intersection Orientation: North-South | | | | | Study Period (hrs): 1.00 | | | |
| Vehicle Volumes and Adjustments | | | | | | | | |
| Major Street | Northbound | | | Southbound | | | | |
| Movement | 1 | 2 | 3 | 4 | 5 | 6 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 4 | 149 | 3 | 2 | 167 | | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 4 | 149 | 3 | 2 | 167 | 57 | | |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- | | |
| Median Type | Undivided | | | | | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 1 | 1 | 0 | 0 | 1 | 1 | | |
| Configuration | L | | TR | LT | | R | | |
| Upstream Signal | | 0 | | | 0 | | | |
| Minor Street | Eastbound | | | Westbound | | | | |
| Movement | 7 | 8 | 9 | 10 | 11 | 12 | | |
| | L | T | R | L | T | R | | |
| Volume (veh/h) | 4 | 0 | 7 | 1 | 0 | 4 | | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Hourly Flow Rate, HFR (veh/h) | 4 | 0 | 7 | 1 | 0 | 4 | | |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 | | |
| Percent Grade (%) | 0 | | | 0 | | | | |
| Flared Approach | | N | | | N | | | |
| Storage | | 0 | | | 0 | | | |
| RT Channelized | | | 0 | | | 0 | | |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 | | |
| Configuration | | LTR | | | LTR | | | |
| Delay, Queue Length, and Level of Service | | | | | | | | |
| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | LT | LTR | | | LTR | | |
| v (veh/h) | 4 | 2 | 5 | | | 11 | | |
| C (m) (veh/h) | 1299 | 1381 | 809 | | | 754 | | |
| v/c | 0.00 | 0.00 | 0.01 | | | 0.01 | | |
| 95% queue length | 0.01 | 0.00 | 0.02 | | | 0.04 | | |
| Control Delay (s/veh) | 7.8 | 7.6 | 9.5 | | | 9.8 | | |
| LOS | A | A | A | | | A | | |
| Approach Delay (s/veh) | -- | -- | 9.5 | | | 9.8 | | |
| Approach LOS | -- | -- | A | | | A | | |

TWO-WAY STOP CONTROL SUMMARY

| General Information | | | Site Information | |
|----------------------|------------------|--|------------------|-------------------------------|
| Analyst | C. Clouse | | Intersection | Lovers (Rd 140) at Proj Drive |
| Agency/Co. | Tul. Co. Compost | | Jurisdiction | Tulare County |
| Date Performed | 7/12/2012 | | Analysis Year | 2012 |
| Analysis Time Period | PM Peak | | | |

Project Description 12-1273

East/West Street: Project Driveway

North/South Street: Lovers Lane

Intersection Orientation: North-South

Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 3 | 214 | 1 | 2 | 186 | 3 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 3 | 214 | 1 | 2 | 186 | 3 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 1 | 1 | 0 | 0 | 1 | 1 |
| Configuration | L | | TR | LT | | R |
| Upstream Signal | | 0 | | | 0 | |

| Minor Street | Eastbound | | | Westbound | | |
|-------------------------------|-----------|------|------|-----------|------|------|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 5 | 1 | 5 | 3 | 5 | 3 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 5 | 1 | 5 | 3 | 5 | 3 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | LT | | LTR | | | LTR | |
| v (veh/h) | 3 | 2 | | 11 | | | 11 | |
| C (m) (veh/h) | 1338 | 1309 | | 588 | | | 641 | |
| v/c | 0.00 | 0.00 | | 0.02 | | | 0.02 | |
| 95% queue length | 0.01 | 0.00 | | 0.06 | | | 0.05 | |
| Control Delay (s/veh) | 7.7 | 7.8 | | 11.2 | | | 10.7 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 11.2 | | | 10.7 | | |
| Approach LOS | -- | -- | B | | | B | | |

























APPENDIX B













EXISTING PLUS THE PROJECT CONDITIONS

INTERSECTION LEVELS OF SERVICE CALCULATIONS

APPENDIX D

2035 WITHOUT THE PROJECT CONDITIONS INTERSECTION LEVELS OF SERVICE CALCULATIONS

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frnt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.295 | | | 0.275 | | | 0.740 | | | 0.752 | | |
| Satd. Flow (perm) | 550 | 3539 | 1583 | 512 | 3539 | 1583 | 1378 | 1863 | 1583 | 1401 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 151 | | | 171 | | | 37 | | | 168 |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 2903 | | | 3161 | | | 2528 | | | 1984 | |
| Travel Time (s) | | 66.0 | | | 71.8 | | | 57.5 | | | 45.1 | |
| Volume (vph) | 197 | 831 | 139 | 111 | 786 | 157 | 40 | 8 | 34 | 145 | 24 | 172 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 214 | 903 | 151 | 121 | 854 | 171 | 43 | 9 | 37 | 158 | 26 | 187 |
| Lane Group Flow (vph) | 214 | 903 | 151 | 121 | 854 | 171 | 43 | 9 | 37 | 158 | 26 | 187 |
| Turn Type | Perm | | Perm | Perm | | Perm | Perm | | Perm | Perm | | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phases | 4 | 4 | 4 | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (%) | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | Max | Max | Max | Max | Max | Max |
| Walk Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 | 16.8 |
| Actuated g/C Ratio | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.49 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 |
| v/c Ratio | 0.79 | 0.52 | 0.18 | 0.48 | 0.49 | 0.20 | 0.09 | 0.01 | 0.07 | 0.33 | 0.04 | 0.29 |
| Uniform Delay, d1 | 10.2 | 8.4 | 0.0 | 8.2 | 8.2 | 0.0 | 11.0 | 10.7 | 0.0 | 12.0 | 10.8 | 1.1 |
| Control Delay | 21.1 | 8.4 | 1.5 | 11.6 | 8.2 | 1.5 | 16.4 | 15.9 | 7.2 | 18.8 | 16.0 | 6.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 21.1 | 8.4 | 1.5 | 11.6 | 8.2 | 1.5 | 16.4 | 15.9 | 7.2 | 18.8 | 16.0 | 6.0 |
| LOS | C | A | A | B | A | A | B | B | A | B | B | A |
| Approach Delay | | 9.7 | | | 7.6 | | | 12.5 | | | 12.1 | |

| | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Approach LOS | | A | | | A | | | B | | | B | |

























Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 49.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 57.3%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 3: Int



| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.278 | | | 0.260 | | | 0.742 | | | 0.749 | | |
| Satd. Flow (perm) | 518 | 3539 | 1583 | 484 | 3539 | 1583 | 1382 | 1863 | 1583 | 1395 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 147 | | | 209 | | | 45 | | | 165 |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 2903 | | | 3161 | | | 2528 | | | 1984 | |
| Travel Time (s) | | 66.0 | | | 71.8 | | | 57.5 | | | 45.1 | |
| Volume (vph) | 240 | 882 | 135 | 108 | 835 | 192 | 49 | 12 | 41 | 145 | 22 | 172 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 261 | 959 | 147 | 117 | 908 | 209 | 53 | 13 | 45 | 158 | 24 | 187 |
| Lane Group Flow (vph) | 261 | 959 | 147 | 117 | 908 | 209 | 53 | 13 | 45 | 158 | 24 | 187 |
| Turn Type | Perm | | Perm | Perm | | Perm | Perm | | Perm | Perm | | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phases | 4 | 4 | 4 | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 45.0 | 45.0 | 45.0 | 45.0 | 45.0 | 45.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (%) | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% | 69.2% | 30.8% | 30.8% | 30.8% | 30.8% | 30.8% | 30.8% |
| Maximum Green (s) | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 | 41.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | Max | Max | Max | Max | Max | Max |
| Walk Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Act Effct Green (s) | 32.4 | 32.4 | 32.4 | 32.4 | 32.4 | 32.4 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 | 16.7 |
| Actuated g/C Ratio | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 | 0.56 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 | 0.29 |
| v/c Ratio | 0.89 | 0.48 | 0.15 | 0.43 | 0.46 | 0.21 | 0.13 | 0.02 | 0.09 | 0.39 | 0.04 | 0.32 |
| Uniform Delay, d1 | 10.8 | 7.3 | 0.0 | 7.0 | 7.2 | 0.0 | 14.8 | 14.4 | 0.0 | 16.1 | 14.5 | 1.7 |
| Control Delay | 32.1 | 7.5 | 1.4 | 10.6 | 7.3 | 1.3 | 20.0 | 18.9 | 7.5 | 23.7 | 19.0 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 32.1 | 7.5 | 1.4 | 10.6 | 7.3 | 1.3 | 20.0 | 18.9 | 7.5 | 23.7 | 19.0 | 7.1 |
| LOS | C | A | A | B | A | A | B | B | A | C | B | A |
| Approach Delay | | 11.5 | | | 6.6 | | | 14.8 | | | 15.0 | |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Approach LOS | | B | | | A | | | B | | | B | |

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 57.4
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 10.1
Intersection Capacity Utilization 61.1%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service B

Splits and Phases: 3: Int



TWO-WAY STOP CONTROL SUMMARY

| General Information | | | Site Information | |
|----------------------|------------------|--|------------------|----------------------------|
| Analyst | C. Clouse | | Intersection | Lovers (Rd 140) at Ave 240 |
| Agency/Co. | Tul. Co. Compost | | Jurisdiction | Tulare County |
| Date Performed | 7/12/2012 | | Analysis Year | 2035 WITHOUT Project |
| Analysis Time Period | AM Peak | | | |

Project Description 12-1273

East/West Street: Ave. 240

North/South Street: Lovers Lane

Intersection Orientation: North-South

Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 35 | 241 | 6 | 8 | 240 | 44 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 35 | 241 | 6 | 8 | 240 | 44 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 |
| Configuration | L | | TR | L | | TR |
| Upstream Signal | | 0 | | | 0 | |

| Minor Street | Eastbound | | | Westbound | | |
|-------------------------------|-----------|------|------|-----------|------|------|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 37 | 1 | 31 | 4 | 1 | 5 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 37 | 1 | 31 | 4 | 1 | 5 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | L | | LTR | | | LTR | |
| v (veh/h) | 35 | 8 | | 10 | | | 69 | |
| C (m) (veh/h) | 1234 | 1273 | | 511 | | | 504 | |
| v/c | 0.03 | 0.01 | | 0.02 | | | 0.14 | |
| 95% queue length | 0.09 | 0.02 | | 0.06 | | | 0.47 | |
| Control Delay (s/veh) | 8.0 | 7.8 | | 12.2 | | | 13.3 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 12.2 | | | 13.3 | | |
| Approach LOS | -- | -- | B | | | B | | |

TWO-WAY STOP CONTROL SUMMARY

| General Information | | | Site Information | |
|----------------------|------------------|--|------------------|----------------------------|
| Analyst | C. Clouse | | Intersection | Lovers (Rd 140) at Ave 240 |
| Agency/Co. | Tul. Co. Compost | | Jurisdiction | Tulare County |
| Date Performed | 7/12/2012 | | Analysis Year | 2035 WITHOUT Project |
| Analysis Time Period | PM Peak | | | |

Project Description 12-1273

East/West Street: Ave. 240

North/South Street: Lovers Lane

Intersection Orientation: North-South

Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 32 | 272 | 7 | 9 | 215 | 39 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 32 | 272 | 7 | 9 | 215 | 39 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 1 | 1 | 0 | 1 | 1 | 0 |
| Configuration | L | | TR | L | | TR |
| Upstream Signal | | 0 | | | 0 | |

| Minor Street | Eastbound | | | Westbound | | |
|-------------------------------|-----------|------|------|-----------|------|------|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 44 | 1 | 30 | 3 | 1 | 5 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 44 | 1 | 30 | 3 | 1 | 5 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | L | | LTR | | | LTR | |
| v (veh/h) | 32 | 9 | | 9 | | | 75 | |
| C (m) (veh/h) | 1266 | 1239 | | 526 | | | 494 | |
| v/c | 0.03 | 0.01 | | 0.02 | | | 0.15 | |
| 95% queue length | 0.08 | 0.02 | | 0.05 | | | 0.54 | |
| Control Delay (s/veh) | 7.9 | 7.9 | | 12.0 | | | 13.6 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | | 12.0 | | | 13.6 | |
| Approach LOS | -- | -- | | B | | | B | |

TWO-WAY STOP CONTROL SUMMARY

| General Information | | | Site Information | |
|----------------------|------------------|--|------------------|-------------------------------|
| Analyst | C. Clouse | | Intersection | Lovers (Rd 140) at Proj Drive |
| Agency/Co. | Tul. Co. Compost | | Jurisdiction | Tulare County |
| Date Performed | 7/12/2012 | | Analysis Year | 2035 WITHOUT Project |
| Analysis Time Period | AM Peak | | | |

Project Description 12-1273

East/West Street: Project Driveway

North/South Street: Lovers Lane

Intersection Orientation: North-South

Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 16 | 280 | 6 | 7 | 277 | 9 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 16 | 280 | 6 | 7 | 277 | 9 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 1 | 1 | 0 | 0 | 1 | 1 |
| Configuration | L | | TR | LT | | R |
| Upstream Signal | | 0 | | | 0 | |

| Minor Street | Eastbound | | | Westbound | | |
|-------------------------------|-----------|------|------|-----------|------|------|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 16 | 1 | 19 | 2 | 1 | 7 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 16 | 1 | 19 | 2 | 1 | 7 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | LT | | LTR | | | LTR | |
| v (veh/h) | 16 | 7 | | 10 | | | 36 | |
| C (m) (veh/h) | 1232 | 1232 | | 586 | | | 523 | |
| v/c | 0.01 | 0.01 | | 0.02 | | | 0.07 | |
| 95% queue length | 0.04 | 0.02 | | 0.05 | | | 0.22 | |
| Control Delay (s/veh) | 8.0 | 7.9 | | 11.2 | | | 12.4 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 11.2 | | | 12.4 | | |
| Approach LOS | -- | -- | B | | | B | | |

TWO-WAY STOP CONTROL SUMMARY

| General Information | | Site Information | |
|----------------------|------------------|------------------|-------------------------------|
| Analyst | C. Clouse | Intersection | Lovers (Rd 140) at Proj Drive |
| Agency/Co. | Tul. Co. Compost | Jurisdiction | Tulare County |
| Date Performed | 7/12/2012 | Analysis Year | 2035 WITHOUT Project |
| Analysis Time Period | PM Peak | | |

Project Description 12-1273

East/West Street: Project Driveway

North/South Street: Lovers Lane

Intersection Orientation: North-South

Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 12 | 309 | 7 | 8 | 248 | |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 12 | 309 | 7 | 8 | 248 | 3 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 1 | 1 | 0 | 0 | 1 | 1 |
| Configuration | L | | TR | LT | | R |
| Upstream Signal | | 0 | | | 0 | |

| Minor Street | Eastbound | | | Westbound | | |
|-------------------------------|-----------|------|------|-----------|------|------|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 18 | 2 | 18 | 1 | 9 | 5 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 18 | 2 | 18 | 1 | 9 | 5 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | L | LT | | LTR | | | LTR | |
| v (veh/h) | 12 | 8 | | 15 | | | 38 | |
| C (m) (veh/h) | 1269 | 1200 | | 477 | | | 509 | |
| v/c | 0.01 | 0.01 | | 0.03 | | | 0.07 | |
| 95% queue length | 0.03 | 0.02 | | 0.10 | | | 0.24 | |
| Control Delay (s/veh) | 7.9 | 8.0 | | 12.8 | | | 12.6 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 12.8 | | | 12.6 | | |
| Approach LOS | -- | -- | B | | | B | | |

TWO-WAY STOP CONTROL SUMMARY

| General Information | | | Site Information | |
|----------------------|------------------|--|------------------|----------------------------|
| Analyst | C. Clouse | | Intersection | Lovers (Rd 140) at Ave 248 |
| Agency/Co. | Tul. Co. Compost | | Jurisdiction | Tulare County |
| Date Performed | 7/12/2012 | | Analysis Year | 2035 WITHOUT Project |
| Analysis Time Period | AM Peak | | | |

| | | | | |
|---------------------------------------|--|--|---------------------------------|--|
| Project Description 12-1273 | | | | |
| East/West Street: Ave. 248 | | | North/South Street: Lovers Lane | |
| Intersection Orientation: North-South | | | Study Period (hrs): 1.00 | |

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 31 | 238 | 23 | 27 | 230 | 37 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 31 | 238 | 23 | 27 | 230 | 37 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | LTR | | | LTR | | |
| Upstream Signal | | 0 | | | 0 | |

| Minor Street | Eastbound | | | Westbound | | |
|-------------------------------|-----------|------|------|-----------|------|------|
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 31 | 3 | 26 | 14 | 2 | 17 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 31 | 3 | 26 | 14 | 2 | 17 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | LTR | LTR | | LTR | | | LTR | |
| v (veh/h) | 31 | 27 | | 33 | | | 60 | |
| C (m) (veh/h) | 1252 | 1258 | | 498 | | | 476 | |
| v/c | 0.02 | 0.02 | | 0.07 | | | 0.13 | |
| 95% queue length | 0.08 | 0.07 | | 0.21 | | | 0.43 | |
| Control Delay (s/veh) | 7.9 | 7.9 | | 12.7 | | | 13.7 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 12.7 | | | 13.7 | | |
| Approach LOS | -- | -- | B | | | B | | |

TWO-WAY STOP CONTROL SUMMARY

General Information

| | |
|----------------------|------------------|
| Analyst | C. Clouse |
| Agency/Co. | Tul. Co. Compost |
| Date Performed | 7/12/2012 |
| Analysis Time Period | PM Peak |

Site Information

| | |
|---------------|----------------------------|
| Intersection | Lovers (Rd 140) at Ave 248 |
| Jurisdiction | Tulare County |
| Analysis Year | 2035 WITHOUT Project |

Project Description 12-1273

East/West Street: Ave. 248

North/South Street: Lovers Lane

Intersection Orientation: North-South

Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

| Major Street | Northbound | | | Southbound | | |
|-------------------------------|------------|------|------|------------|------|------|
| Movement | 1 | 2 | 3 | 4 | 5 | 6 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 28 | 267 | 26 | 29 | 204 | 32 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 28 | 267 | 26 | 29 | 204 | 32 |
| Percent Heavy Vehicles | 10 | -- | -- | 10 | -- | -- |
| Median Type | Undivided | | | | | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | LTR | | | LTR | | |
| Upstream Signal | | 0 | | | 0 | |
| Minor Street | Eastbound | | | Westbound | | |
| Movement | 7 | 8 | 9 | 10 | 11 | 12 |
| | L | T | R | L | T | R |
| Volume (veh/h) | 38 | 3 | 26 | 11 | 2 | 16 |
| Peak-Hour Factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Hourly Flow Rate, HFR (veh/h) | 38 | 3 | 26 | 11 | 2 | 16 |
| Percent Heavy Vehicles | 10 | 0 | 0 | 10 | 0 | 0 |
| Percent Grade (%) | 0 | | | 0 | | |
| Flared Approach | | N | | | N | |
| Storage | | 0 | | | 0 | |
| RT Channelized | | | 0 | | | 0 |
| Lanes | 0 | 1 | 0 | 0 | 1 | 0 |
| Configuration | | LTR | | | LTR | |

Delay, Queue Length, and Level of Service

| Approach | Northbound | Southbound | Westbound | | | Eastbound | | |
|------------------------|------------|------------|-----------|------|---|-----------|------|----|
| Movement | 1 | 4 | 7 | 8 | 9 | 10 | 11 | 12 |
| Lane Configuration | LTR | LTR | | LTR | | | LTR | |
| v (veh/h) | 28 | 29 | | 29 | | | 67 | |
| C (m) (veh/h) | 1286 | 1224 | | 507 | | | 464 | |
| v/c | 0.02 | 0.02 | | 0.06 | | | 0.14 | |
| 95% queue length | 0.07 | 0.07 | | 0.18 | | | 0.51 | |
| Control Delay (s/veh) | 7.9 | 8.0 | | 12.5 | | | 14.1 | |
| LOS | A | A | | B | | | B | |
| Approach Delay (s/veh) | -- | -- | 12.5 | | | 14.1 | | |
| Approach LOS | -- | -- | B | | | B | | |

APPENDIX E

























2035 WITH THE PROJECT CONDITIONS

INTERSECTION LEVELS OF SERVICE CALCULATIONS

Lanes, Volumes, Timings

3: Int

11/19/2012

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SSR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Volume (vph) | 199 | 831 | 139 | 111 | 786 | 168 | 40 | 8 | 34 | 146 | 24 | 174 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 | 1770 | 1863 | 1583 |
| Flt Permitted | 0.277 | | | 0.256 | | | 0.740 | | | 0.752 | | |
| Satd. Flow (perm) | 516 | 3539 | 1583 | 477 | 3539 | 1583 | 1378 | 1863 | 1583 | 1401 | 1863 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 151 | | | 183 | | | 37 | | | 168 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 2903 | | | 3161 | | | 2528 | | | 1984 | |
| Travel Time (s) | | 66.0 | | | 71.8 | | | 57.5 | | | 45.1 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 216 | 903 | 151 | 121 | 854 | 183 | 43 | 9 | 37 | 159 | 26 | 189 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 216 | 903 | 151 | 121 | 854 | 183 | 43 | 9 | 37 | 159 | 26 | 189 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Trailing Detector (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Position(ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Detector 1 Size(ft) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Turn Type | Perm | | Perm | Perm | | Perm | Perm | | Perm | Perm | | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Minimum Split (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (s) | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Total Split (%) | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 66.7% | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |

SR 137 at Lovers Ln (Rd 140) 12:00 pm 7/12/2012 2012

%user_name%

Synchro 7 - Report

Page 1

March 5, 2013

Ms. Linda Novick
Harvest Power
6943 N. Golden State Blvd.
Fresno, CA 93722

Dear Ms. Novick,

We have reviewed the administrative draft sections of the EIR that pertain to traffic and the two traffic impact studies prepared by TPG Consulting for the Harvest Power project in Tulare County. That review has led to the following conclusions.

The original Traffic Impact Study was prepared in July 2012 and evaluated the increase in the site's permitted processing tonnage from 86,000 tons per year to 216,000 tons per year. That evaluation assumed the following trip generation profile for the additional activities associated with the expansion of the existing operation. These were estimated new trips to be generated by the expanded activities.

85 additional trucks per day from the delivery of the debris
10 additional trucks per day from the material generated by the digester
21 additional trucks per day from the removal of the material
4 additional trucks per day from the existing CNG fueling facility
120 additional trucks per day
x 2 trips per truck (entering and exiting)
240 additional truck trips per day
9 employee trips per day = 3 new employees x 3 trips per day
249 new project trips per day
÷ 13 hours of operation per day
19 trips per hour

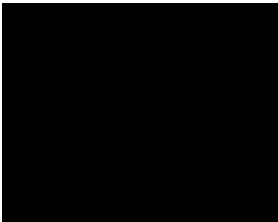
This trip generation profile is incorporated into the administrative draft of the EIR. This represents a conservative approach to the estimation of the new trips that will be added as a result of the expansion of the Project.

After consultation with the Applicant, a second Traffic Impact Study was prepared in November 2012 to reflect a more realistic level of new trips that can be expected from the site with the expansion of the Harvest Power Project.

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35 additional trucks per day
x 2 trips per truck (entering and exiting)
70 additional truck trips per day


$$\frac{9 \text{ employee trips per day} = 3 \text{ new employees} \times 3 \text{ trips per day}}{79 \text{ new project trips per day}} \\ \div 13 \text{ hours of operation per day} \\ 6 \text{ trips per hour}$$

While this approach may more closely reflect the actual traffic that will be generated by the Project, it was not used in the EIR so as to overstate the potential impacts from the Project.

The key for assessing impacts is the number of peak hour trips being added to the road network. With the more conservative approach, only 19 new peak hour trips are added, while with the more realistic approach, a mere 6 additional trips will be added. Neither the 19 or the smaller 6 trips represents significant increases to the existing or future traffic stream.

In either case, the conservative approach or the more realistic approach, level of service analysis was completed on the study intersections. Both analyses concluded that the resulting short term and long term impacts from the Harvest Project would not result in any significant level of service impacts. That is all study intersections or evaluated movements were projected to operate well above the threshold of significance established by both the County of Tulare (Lovers Lane) or Caltrans (State Highway 137).

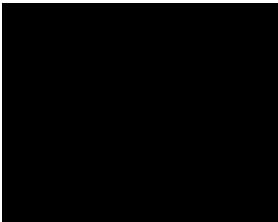
As part of the Staff review and ADEIR preparation, the Applicant has determined that for regulatory purposes and to reflect the fluctuations in the day to day operation, the maximum number of new trucks would not exceed 110 per day. Given that the July 2012 Traffic Impact Study was based on an assumed 120 trucks per day, the current estimated Project truck trips falls below the conservative methodology included in the ADEIR.

$$110 \text{ additional trucks per day} \\ \times 2 \text{ trips per truck (entering and exiting)} \\ 220 \text{ additional truck trips per day} \\ \frac{9 \text{ employee trips per day} = 3 \text{ new employees} \times 3 \text{ trips per day}}{229 \text{ new project trips per day}} \\ \div 13 \text{ hours of operation per day} \\ 18 \text{ trips per hour}$$

This very slight reduction in trucks per day yield a drop from 19 new peak hour trips to 18 new peak hour trips to the Project site. Therefore, it can be reasonably concluded that since the overall peak hour trips is only 18 additional trips, the resulting levels of service at the study intersections will also operate well above the threshold of significance established by both the County of Tulare or Caltrans.

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Thank you for the opportunity to assist with this project. Please feel free to contact me if you have any questions or need any additional information.

Sincerely,

Charles Clouse, AICP, PTP
Principal

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