Diamond Oaks
Transportation Impact Analysis Report – City of Visalia

FINAL REPORT

Prepared for:

Diamond Oaks, LP

Prepared by:

omni · means

ENGINEERS · PLANNERS

DIAMOND OAKS
TRANSPORTATION IMPACT ANALYSIS REPORT

FINAL REPORT

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INTRODUCTION

This report has been prepared to present the results of a Transportation Impact Analysis Report (TIAR) prepared by OMNI-MEANS for a proposed residential development in the City of Visalia. The development, herein called project, is located south of Caldwell Avenue between Burke Street and Ben Maddox Way in the City of Visalia (reference Figure 1).

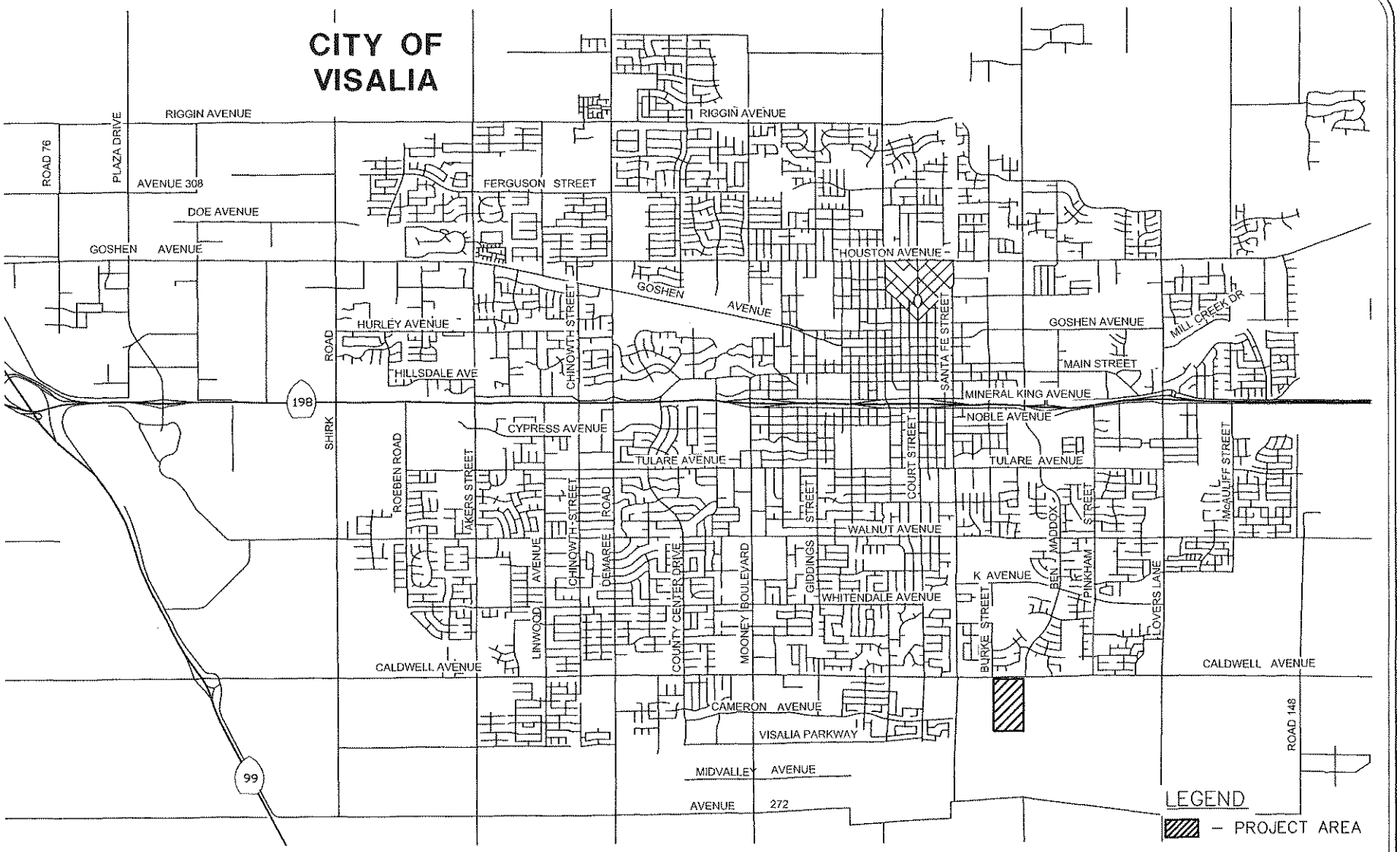
According to the site plan contained in the Appendix, this proposed project includes 55.7 acres of single- and multi-family dwelling units. Ultimately, this project proposes to add 360 dwelling units, including 203 multi-family units and 157 single-family units. This study will include a multi-phased approach. Phase I is includes a total of 99 dwelling units (42 multi-family units, 24 triplex units, and 33 single family units). The additional phases are analyzed under the 2035 cumulative analysis condition.

EXISTING ROADWAY SYSTEM

Roadways that provide primary circulation in the vicinity of the project site include Caldwell Avenue, Burke Street and Ben Maddox Way.

> ***Caldwell Avenue*** is a major east-west arterial in Visalia that extends from the Kings County line as Avenue 280, continues through Visalia and terminates in the City of Exeter as Visalia Road. Caldwell Avenue has a varying cross section through the Visalia City Limits, the majority of which is a four-lane divided arterial. West of Burke Street (between Burke Street and Santa Fe Street), Caldwell Avenue is only partially built-out, and varies from a two to four-lane roadway. Along the proposed project frontage (between Burke Street and Ben Maddox Way), Caldwell Avenue currently operates as a two-lane roadway.
>
> ***Burke Street*** is a non-continuous north-south two-lane collector that extends from Caldwell Avenue north to Monte Vista Avenue within the vicinity of the project. Burke Street then extends from Walnut Avenue, across State Route 198 through downtown Visalia northward to Saint John's Parkway. Burke Street serves residential, commercial and retail uses throughout the corridor. The proposed project will add a south leg to the existing "T" intersection at Caldwell Avenue and Burke Street, which will serve as a project access point.
>
> ***Ben Maddox Way*** is a north-south four-lane divided arterial roadway that provides access to several residences and business. This roadway extends from Caldwell Avenue north throughout the City of Visalia limits and into the county after providing access at the State Route 198/Ben Maddox Way interchange in central Visalia.

Additional roadways that will provide access in the future include the east-west streets of Russel Avenue, Cameron Avenue, Rialto Avenue and Reese Avenue. These roadways are located south of Caldwell Avenue between Burke Street and Ben Maddox Way, within the proposed subdivision.



Diamond Oaks TIAR

Figure 1

Project Vicinity Map

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EXISTING TRAFFIC VOLUMES

Based upon OMNI-MEANS' understanding of the project, the following existing intersections were identified as critical intersections for this study.

- Caldwell Avenue/Burke Street
- Caldwell Avenue/Ben Maddox Way

At the study intersections, existing weekday AM and PM peak-hour traffic volume counts were conducted in September 2012 while schools were in session. The AM peak hour is defined as one-hour of peak traffic flow counted between 7:00 AM and 9:00 AM and the PM peak hour is defined as one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM. Figure 2 shows the existing AM and PM peak hour intersection traffic volumes and the existing lane geometrics and control at the study intersections.

LEVEL OF SERVICE METHODOLOGY

Traffic operations have been quantified through the determination of "Level of Service" (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. LOS was calculated for different intersection control types using the methods documented in the *Highway Capacity Manual 2000 (HCM 2000)*. LOS definitions for different types of intersection controls are outlined in Table 1.

The City of Visalia General Plan Circulation Element has designated LOS "D" as the minimum acceptable LOS standard on City facilities in general. In this report, a peak-hour of LOS "D" is taken as the threshold for acceptable traffic operations at all study intersections. All intersection turning movement volumes and LOS worksheets are contained in the Technical Appendix (available upon request).

To determine whether "significance" should be associated with unsignalized intersection LOS, a supplemental traffic signal warrant analysis was also performed. The signal warrant criteria employed for this study are presented in the *Manual on Uniform Traffic Control Devices* (MUTCD). Specifically, this study utilized the Peak-Hour-Volume Warrant 3 (Urban Areas). Though utilization of this warrant may indicate that signalization would be required, the final decision to provide this improvement should be based on further studies utilizing the additional warrants presented in the MUTCD.

TABLE 1
LEVEL OF SERVICE CRITERIA
FOR INTERSECTIONS

LEVEL OF SERVICE	TYPE OF FLOW	DELAY	MANEUVERABILITY	STOPPED DELAY/VEHICLE (SEC)		
				SIGNALIZED	UNSIGNALIZED	ALL-WAY STOP
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10.0	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10 and ≤ 20.0	>10 and ≤ 15.0	>10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20 and ≤ 35.0	>15 and ≤ 25.0	>15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35 and ≤ 55.0	>25 and ≤ 35.0	>25 and ≤ 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55 and ≤ 80.0	>35 and ≤ 50.0	>35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

References: Highway Capacity Manual 2000

This traffic study generally provides a "planning level" evaluation of traffic operating conditions, which is considered sufficient for California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) purposes. This planning level evaluation has, however, incorporated actual heavy-vehicle adjustment factors, peak hour factors, and signal lost-time factors and reports the resulting intersection delays and LOS as estimated using HCM-2000 methodologies. In this study, a general Peak Hour Factor (PHF) of 0.92 has been applied to the analysis of all study intersections under all analysis scenarios.

The HCM-recommended suburban traffic signal default cycle length of 100 seconds has been used for analysis of future signalized intersections, with 4 seconds of "lost time" per critical signal phase. The *Traffix 8.0* integrated computer software program has been utilized to implement the HCM-2000 analysis methodologies.

EXISTING TRAFFIC OPERATIONS

"Existing" peak-hour intersection traffic operations were quantified applying existing traffic volumes and existing intersection lane geometrics and control (shown on Figure 2). Table 2 presents the "Existing" peak hour intersection LOS.

TABLE 2
EXISTING CONDITIONS:
INTERSECTION LEVELS-OF-SERVICE

			AM Peak Hour			PM Peak Hour		
No	Intersection	Control Type	Delay (sec/veh)	LOS	Warrant Met?	Delay (sec/veh)	LOS	Warrant Met?
1	Caldwell Avenue/Burke Street	OWSC	18.1	C	No	35.5	E	No
2	Caldwell Avenue/Ben Maddox Way	Signal	20.2	C	--	35.7	D	--

Legend: *OWSC = One-Way-Stop Control. AWSC = All-Way Stop Control.*
Average Delay = Average Intersection Delay for Signalized Intersections.
Average Delay = Worst-Case Minor Street Approach Delay for OWSC Intersections.
LOS = Average Intersection Level-of-Service for Signalized Intersections.
LOS = Worst-Case Minor Street Approach Level-of-Service for OWSC Intersections.
Warrant = MUTCD Peak-Hour Warrant-3.

As indicated in Table 2, the intersection at Caldwell Avenue/Burke Street currently operates at LOS "E" conditions during the PM peak hour period under "Existing" conditions. In addition, this unsignalized intersection does not meet the MUTCD Peak Hour Warrant 3 under "Existing" AM or PM peak hour conditions. The final decision to install a traffic signal should be based on further studies utilizing the additional warrants presented in the MUTCD, including, but not limited to:

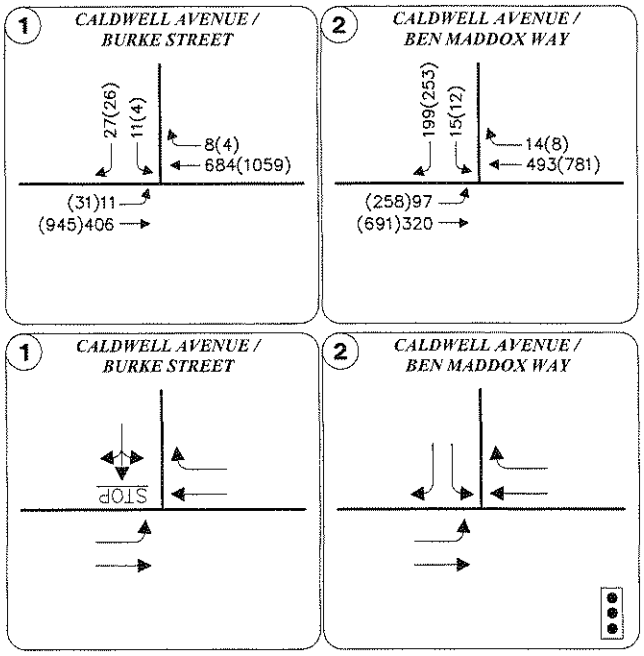
- Warrant 1; Eight-Hour Vehicular Volume
- Warrant 2; Four-Hour Vehicular Volume
- Warrant 7; Crash Experience

Warrant 1; Eight-hour vehicular volume has a lower threshold of 53 vehicles per hour for each of any eight hours of an average day for the higher volume minor street approach. As indicated by existing traffic counts, there are less than 40 vehicles on the minor street approach for the AM and PM peak hours, indicating that the likelihood of the minor street experiencing volumes that exceed the lower threshold for eight hours is very low. For this reason, it is not likely that the Caldwell Avenue/Burke Street intersection would meet the eight-hour vehicular volume signal warrant.

Warrant 2; Four-hour vehicular volume has a lower threshold of 60 vehicles per hour for each of any four hours of an average day for the higher volume minor street approach. As indicated by existing traffic counts, there are less than 40 vehicles on the minor street approach for the AM and PM peak hours, indicating that the likelihood of the minor street experiencing volumes that exceed the lower threshold for four hours is very low. For this reason, it is not likely that the Caldwell Avenue/Burke Street intersection would meet the four-hour vehicular volume signal warrant.

According to the Transportation Injury Mapping System (TIMS), there were no reported collisions at the Caldwell Ave/Burke St intersection during calendar year 2011 (the most recent 12-month period for which data is available from the TIMS website), indicating that the intersection would not meet Warrant 7; Crash Experience. Due to lack of traffic count data, this study does not analyze the four or eight-hour vehicular volume signal warrants.

All mitigation measures are discussed in a subsequent section of this report.



LEGEND:

XX – AM PEAK HOUR TRAFFIC VOLUMES

(XX) – PM PEAK HOUR TRAFFIC VOLUMES

▨ – PROJECT LOCATION

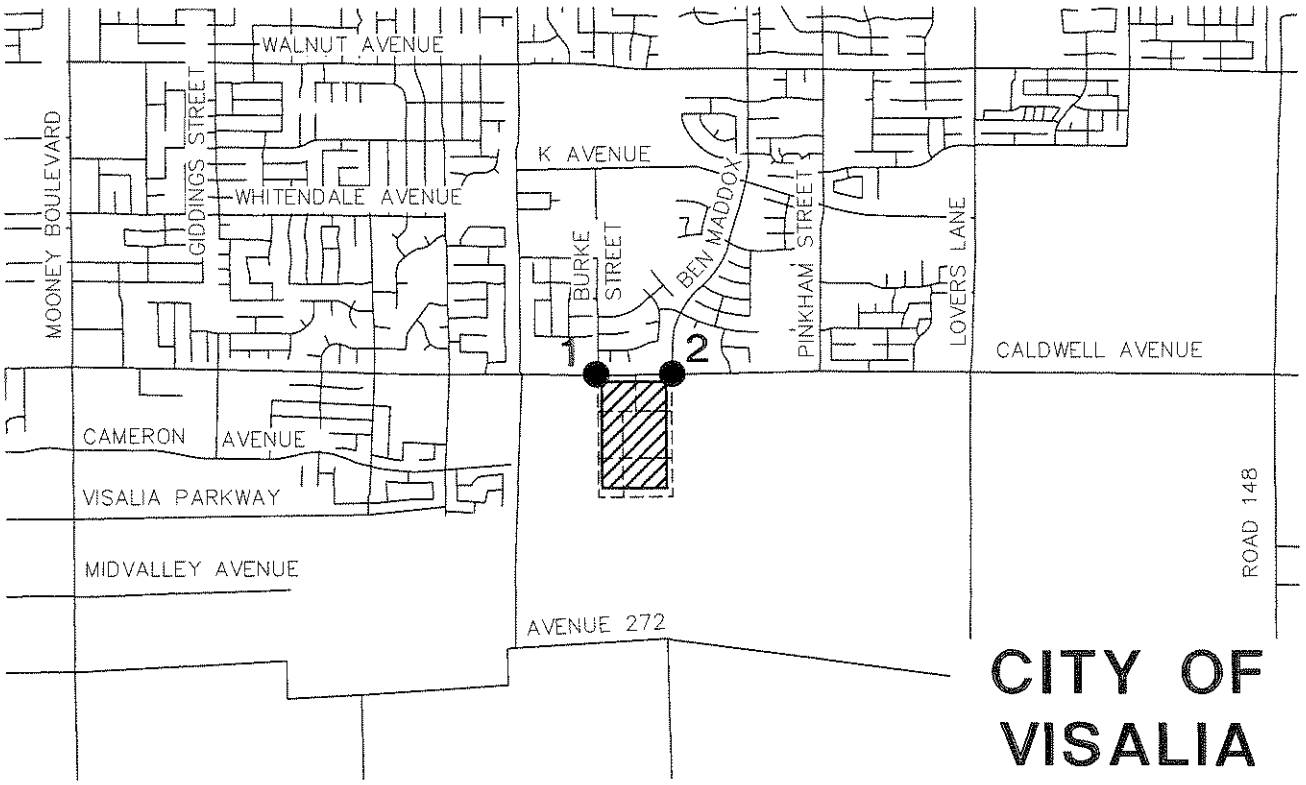


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Figure 2

Existing Traffic Volumes, Lane Geometrics and Control

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PHASE I ACCESS

As identified in the introduction, the residential development is located south of Caldwell Avenue between Burke Street and Ben Maddox Way in the City of Visalia. According to the site plan, this proposed project will develop Burke Street south of Caldwell under Phase I as a "Local Through Street Residential Zones" per City of Visalia improvement standard P-17.

PHASE I TRIP GENERATION

Table 6 identifies the estimated trip generation of the project's land-uses based upon data presented in *ITE Trip Generation* (8th Edition). For this project, trip generation rates for ITE land use codes 210 (single family detached housing), 220 (apartment) and 230 (residential condominium/town house) were applied to obtain the project trips shown in Table 3. As indicated in Table 3, Phase I of this project is estimated to generate 1,136 daily trips, including 94 AM peak hour trips and 121 PM peak hour trips.

TABLE 3
PHASE I TRIP GENERATION

Land Use Category	Unit	Daily Trip Rate/ Unit	Weekday AM Peak Hour Rate/Unit			Weekday PM Peak Hour Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Apartment [ITE Code 220]	Dwelling Unit	7.52	0.54	20%	80%	0.76	65%	35%
Residential Condominium/ Town House [ITE Code 230]	Dwelling Unit	5.83	0.71	17%	83%	0.79	67%	33%
Single-Family Detached Housing [ITE Code 210]	Dwelling Unit	11.37	1.00	25%	75%	1.19	63%	37%
Description	**Quantity (Units)**	**Daily Trips**	**Weekday AM Peak Hour Trips**			**Weekday PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
MFDU	84	632	45	9	36	64	42	22
Triplex Units	24	140	17	3	14	19	13	6
SFDU	32	364	32	8	24	38	24	14
Total Trips		**1,136**	**94**	**20**	**74**	**121**	**79**	**42**

Note: Errors due to rounding may occur.

PHASE I TRIP NATURE, DISTRIBUTION, AND ASSIGNMENT

Phase I of the project is expected to "generate" and "attract" trips throughout the City. Directional trip distribution for project generated trips was estimated based upon a select zone model run from the Tulare County Association of Governments (TCAG), existing traffic flow patterns, geographic location of the project site, and location of other similar destinations. The resulting trip distribution for Phase I project trips is shown on Figure 3 and identified below:

- 50% to/from Caldwell Avenue west of Burke Street;
- 20% to/from Caldwell Avenue east of Ben Maddox Way;
- 8% to/from Burke Street north of Caldwell Avenue; and,
- 22% to/from Ben Maddox Way north of Caldwell Avenue;

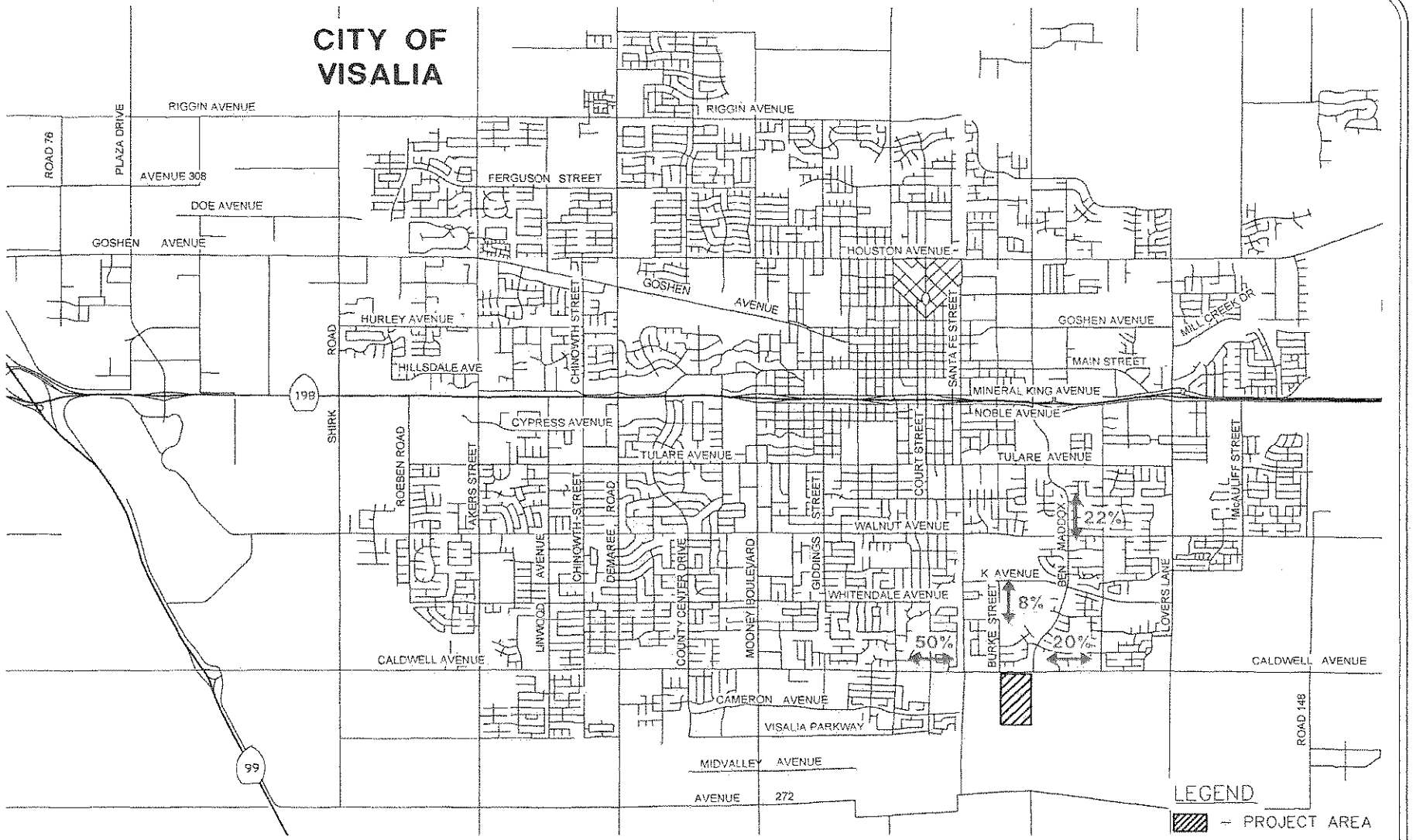

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Figure 3

Phase I Trip Distribution

EXISTING PLUS PHASE I CONDITIONS

"Existing plus Phase I" peak-hour intersection operations were quantified utilizing the proposed lane geometrics and control identified in Figure 2. Utilizing *Traffix 8.0* computer software, "Existing plus Phase I" peak hour conditions were simulated by superimposing new trips generated over "Existing" traffic at the study intersections. The resulting "Existing plus Phase I" peak hour intersection traffic volumes and the lane geometrics and control are shown on Figure 4. Table 4 presents the resulting peak hour intersection LOS.

TABLE 4
EXISTING PLUS PHASE I CONDITIONS:
INTERSECTION LEVELS-OF-SERVICE

			AM Peak Hour			PM Peak Hour		
No	Intersection	Control Type	Delay (sec/veh)	LOS	Warrant Met?	Delay (sec/veh)	LOS	Warrant Met?
1	Caldwell Avenue/Burke Street	TWSC	37.0	E	No	OVRFL	F	No
2	Caldwell Avenue/Ben Maddox Way	Signal	20.9	C	--	40.2	D	--
3	Caldwell Avenue/Edison Street	OWSC	10.9	B	No	18.3	C	No
4	Russel Avenue/Burke Street	TWSC	9.3	A	No	9.2	A	No
5	Cameron Avenue/Burke Street	TWSC	8.5	A	No	8.6	A	No

Legend: *OWSC = One-Way-Stop Control. TWSC = Two-Ways Stop Control AWSC = All-Way Stop Control.*
Average Delay = Average Intersection Delay for Signalized Intersections.
Average Delay = Worst-Case Minor Street Approach Delay for OWSC Intersections.
LOS = Average Intersection Level-of-Service for Signalized Intersections.
LOS = Worst-Case Minor Street Approach Level-of-Service for OWSC Intersections.
Warrant = MUTCD Peak-Hour Warrant-3.
OVRFL = Overflow conditions (> 100 seconds delay).

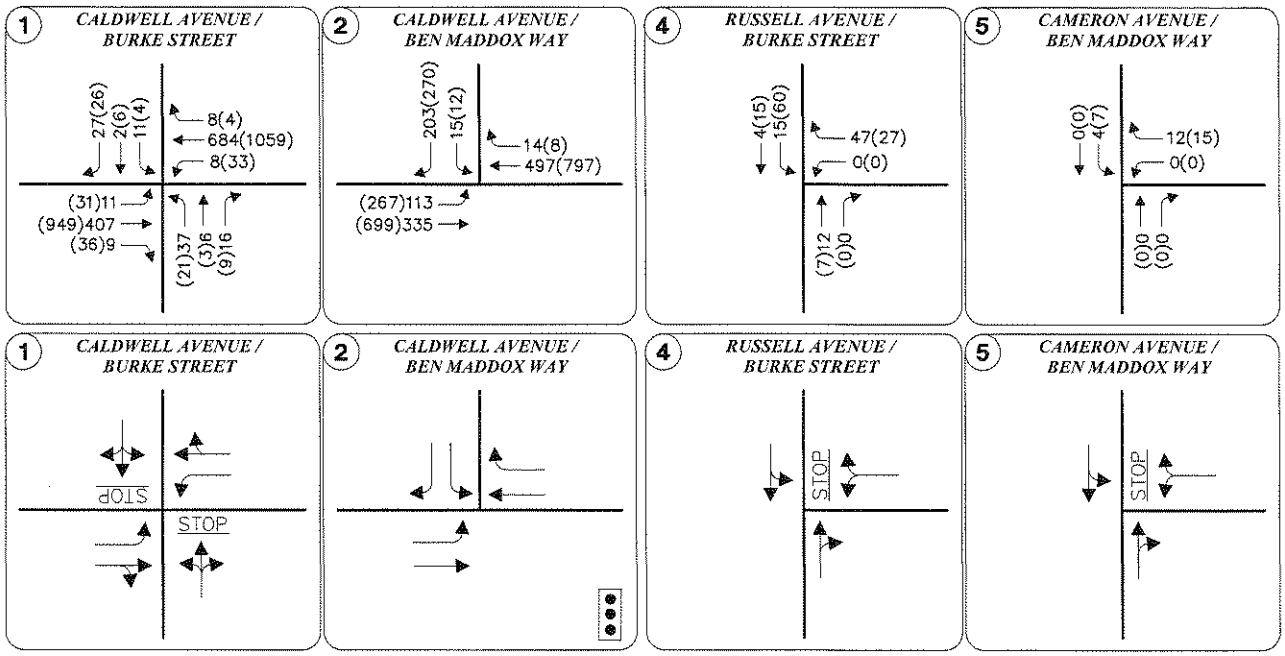
As shown in Table 4, one of the study intersections is projected to operate at a LOS "E/F" conditions during AM and PM peak hour periods under "Existing plus Phase I" conditions scenario. However, the study intersection does not meet the MUTCD Peak Hour Warrant 3 under "Existing plus Phase I" AM and/or PM peak hour conditions. The final decision to install a traffic signal should be based on further studies utilizing the additional warrants presented in the MUTCD, including, but not limited to:

- Warrant 1; Eight-Hour Vehicular Volume
- Warrant 2; Four-Hour Vehicular Volume
- Warrant 7; Crash Experience

The higher volume minor street approach volumes at the Caldwell Avenue/Burke Street intersection are 64 and 36 under Existing plus Phase I AM and PM peak hour conditions, respectively. As previously mentioned the eight-hour and four-hour vehicular volume warrants have lower thresholds of 53 vehicles (for eight hours), and 60 vehicles (for four hours), respectively. Since the AM peak hour higher volume minor street approach is projected to experience volumes just above these lower thresholds, it is not likely that these would hold for four or eight hours of an average day, however, this cannot be 100% verified without collecting traffic data after the first phase of the project is built and occupied.

Furthermore, warrant 7; crash experience would need to evaluated under post project conditions.

All mitigation measures are discussed in a subsequent section of this report.



LEGEND:

XX – AM PEAK HOUR TRAFFIC VOLUMES

(XX) – PM PEAK HOUR TRAFFIC VOLUMES

▨ – PROJECT LOCATION

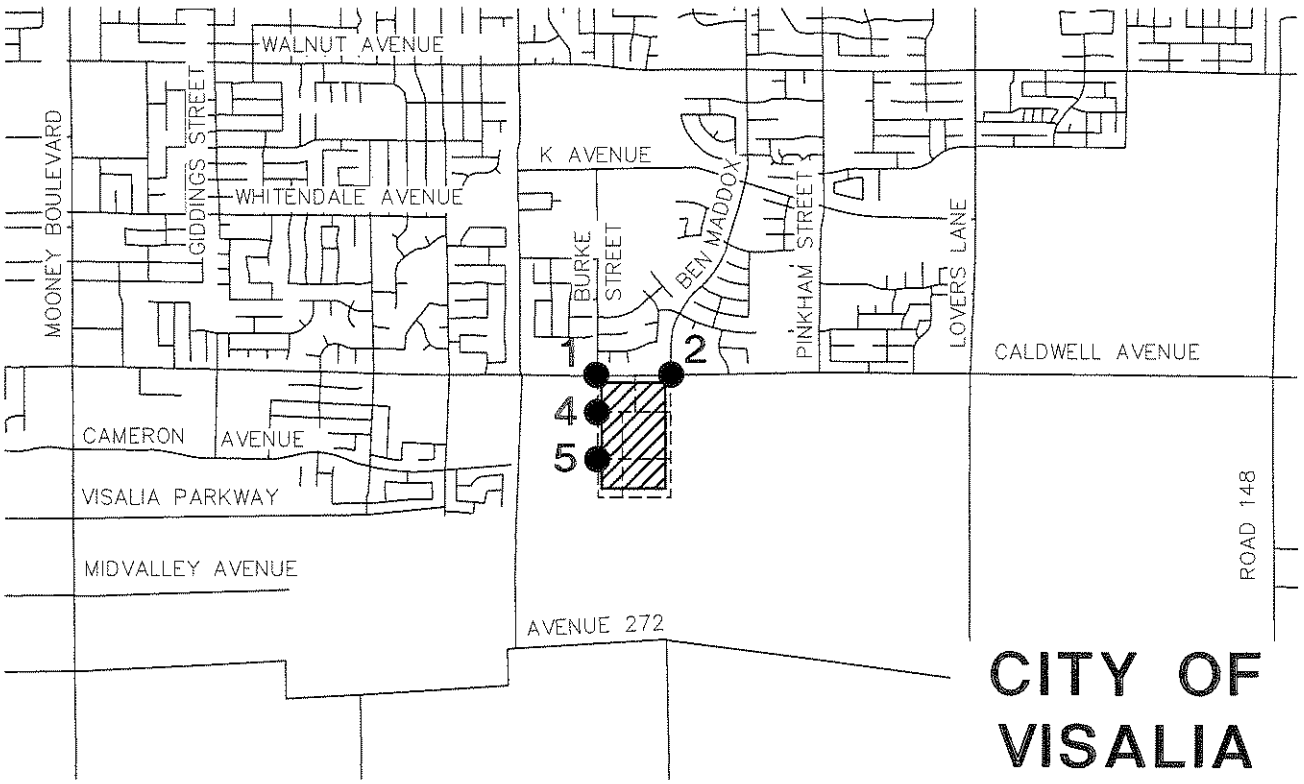


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Figure 4

Existing plus Phase I Traffic Volumes, Lane Geometrics and Control

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FUTURE CONDITIONS

GENERAL

Under Year 2035 conditions, two scenarios were analyzed. Under the first scenario, herein called the "Year 2035 Base" scenario, it is assumed that the City will continue to develop but the project development will not occur. The second scenario, identified as "Year 2035 Base plus Project," assumes that development of the entire Project will occur.

There are certain improvements within the study area that are assumed to be "in-place" under Year 2035 Base conditions, regardless of whether or not the project is built-out. The following "programmed" improvements, as identified in Phase I of the Measure R expenditure plan, are assumed to be "in-place" under Year 2035 Base conditions.

- Caldwell Avenue (Santa Fe Avenue to Lovers Lane) - Widen to 4-lane divided arterial

OMNI-MEANS worked with TCAG staff to develop future year (2035) traffic volumes utilizing the TCAG Regional Travel Demand Forecast Model, which uses *Cube* software. Although TCAG has a peak hour model, it was not utilized for the future analysis. OMNI-MEANS used the daily directional traffic counts at each leg of the intersection to balance the turning movement counts. The turning movement counts were computed using techniques provided in National Cooperative Highway Research Program (NCHRP 255) through the use of TurnsW32 computer application. Based upon future trip "ins" and "outs" for each leg of the intersection, TurnsW32 runs several iterations to calculate future daily traffic volumes by turning movement. Following this process, OMNI-MEANS checked the forecasted turning movements for reasonableness and made adjustments where necessary. Peak hour traffic volumes were derived from the adjusted daily traffic volumes using typical daily to peak hour traffic relationships.

YEAR 2035 BASE CONDITIONS

"Year 2035 Base" peak-hour intersection traffic operations were quantified applying "Year 2035 Base" traffic volumes and "Year 2035 Base" intersection lane geometrics and control both identified on Figure 5. Table 5 presents the "Year 2035 Base" peak hour intersection LOS.

TABLE 5
YEAR 2035 BASE CONDITIONS:
INTERSECTION LEVELS-OF-SERVICE

			AM Peak Hour			PM Peak Hour		
No	Intersection	Control Type	Delay (sec/veh)	LOS	Warrant Met?	Delay (sec/veh)	LOS	Warrant Met?
1	Caldwell Avenue/Burke Street	TWSC	33.9	D	No	64.9	F	No
2	Caldwell Avenue/Ben Maddox Way	Signal	23.3	C	--	37.4	D	--

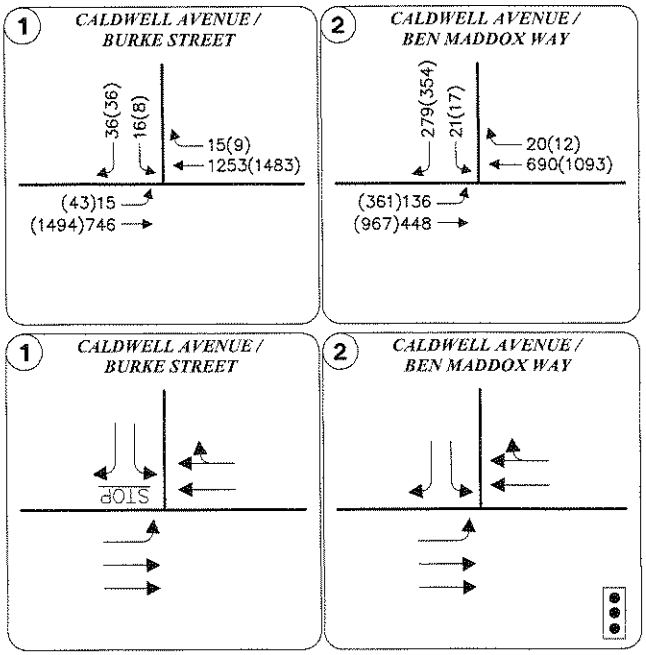
Legend: *TWSC = Two-Way-Stop Control. TWSC =Two-Way Stop Control.*
Average Delay = Average Intersection Delay for Signalized Intersections.
Average Delay = Worst-Case Minor Street Approach Delay for TWSC Intersections.
LOS = Average Intersection Level-of-Service for Signalized Intersections.
LOS = Worst-Case Minor Street Approach Level-of-Service for TWSC/OWSC Intersections.
Warrant = MUTCD Peak-Hour Warrant-3.
OVRFL = Overflow conditions (> 100 seconds delay).

As shown in Table 5, the intersection at Caldwell Avenue/Burke Street is projected to operate at peak hour LOS "F" conditions under PM peak hour periods for "Year 2035 Base" conditions. In addition, this unsignalized intersection at Caldwell Avenue/Burke Street is not forecasted to meet the MUTCD Peak Hour Warrant 3 under "Year 2035 Base" PM peak hour volume conditions. The final decision to install a traffic signal should be based on further studies utilizing the additional warrants presented in the MUTCD, including, but not limited to:

- Warrant 1; Eight-Hour Vehicular Volume
- Warrant 2; Four-Hour Vehicular Volume

The higher volume minor street approach volumes at the Caldwell Avenue/Burke Street intersection are 52 and 44 under Year 2035 Base AM and PM peak hour conditions, respectively. As previously mentioned the eight-hour and four-hour vehicular volume warrants have lower thresholds of 53 vehicles (for eight hours), and 60 vehicles (for four hours), respectively. Since the AM peak hour higher volume minor street approach is projected to experience volumes just under these lower thresholds, it is not likely that the lower thresholds would be met for four or eight hours of an average day.

All mitigation measures are discussed in a subsequent section of this report.



LEGEND:

XX – AM PEAK HOUR TRAFFIC VOLUMES

(XX) – PM PEAK HOUR TRAFFIC VOLUMES

▨ – PROJECT LOCATION

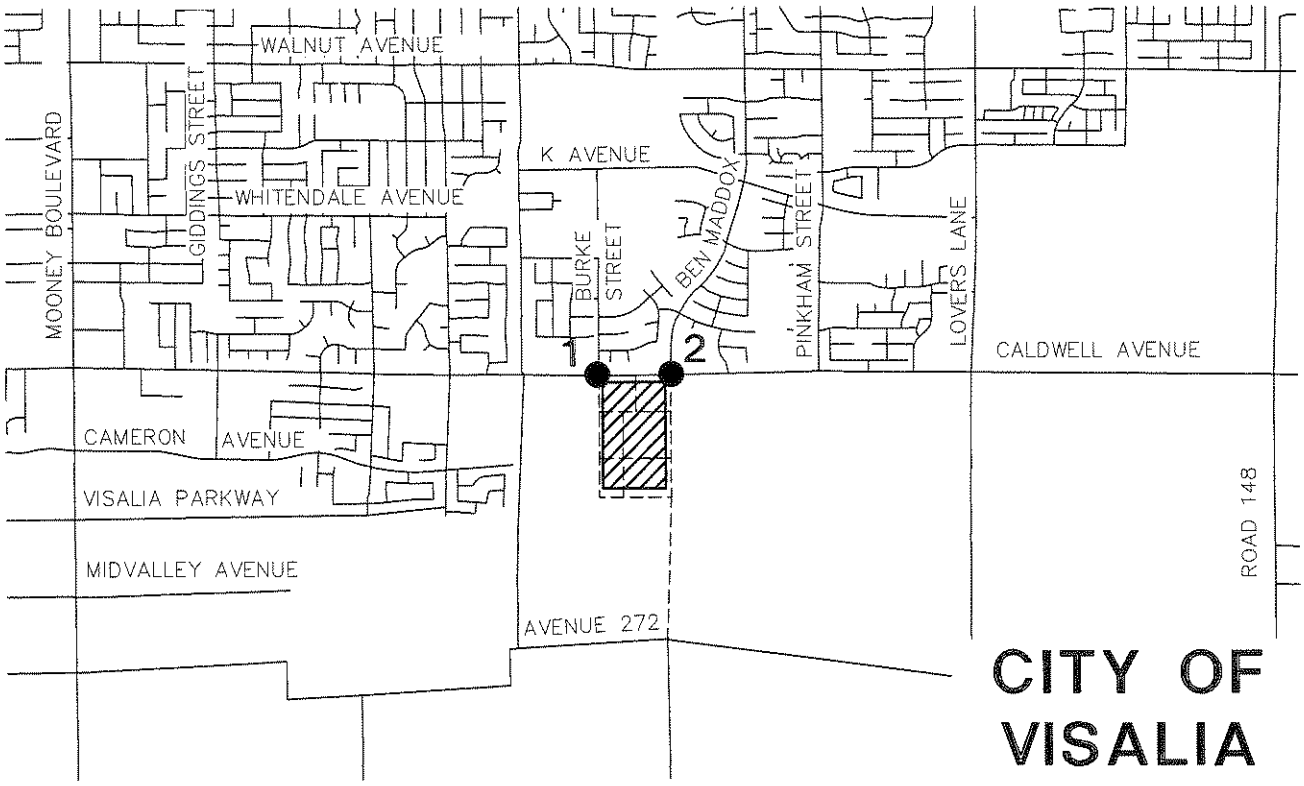


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Figure 5

Year 2035 Base Traffic Volumes, Lane Geometrics and Control

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YEAR 2035 TRIP GENERATION

Table 6 identifies the estimated trip generation of the project's land-uses based upon data presented in *ITE Trip Generation* (8th Edition). For this project, trip generation rates for ITE land use codes 220, 230 and 210 were applied to obtain the project trips contained in Table 6. As indicated in Table 6, this project is estimated to generate 2,856 daily trips, including 223 AM peak hour trips and 287 PM peak hour trips for the "Year 2035 Base plus Project" scenario.

TABLE 6
PROJECT TRIP GENERATION (PHASES I- IV)

Land Use Category	Unit	Daily Trip Rate/ Unit	Weekday AM Peak Hour Rate/Unit			Weekday PM Peak Hour Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Apartment [ITE Code 220]	Dwelling Unit	6.80	0.51	20%	80%	0.65	65%	35%
Residential Condominium/ Town House [ITE Code 230]	Dwelling Unit	5.83	0.71	17%	83%	0.79	67%	33%
Single-Family Detached Housing [ITE Code 210]	Dwelling Unit	10.03	0.76	25%	75%	1.01	63%	37%
Description	**Quantity (Units)**	**Daily Trips**	**Weekday AM Peak Hour Trips**			**Weekday PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
MFDU	168	1,142	86	17	69	110	72	38
Triplex Units	24	140	17	3	14	19	13	6
SFDU	157	1,574	120	30	90	158	100	58
Total Trips		**2,856**	**223**	**50**	**173**	**287**	**185**	**102**

Note: Errors due to rounding may occur.

YEAR 2035 BASE PLUS PROJECT CONDITIONS

"Year 2035 Base plus Project" peak-hour intersection traffic operations were quantified applying "Year 2035 Base plus Project" traffic volumes shown on Figure 6 and "Year 2035 Base plus Project" intersection lane geometrics and control shown on Figure 7. Table 7 presents the "Year 2035 Base plus Project" peak hour intersection LOS.

TABLE 7
YEAR 2035 BASE PLUS PROJECT CONDITIONS:
INTERSECTION LEVELS-OF-SERVICE

			AM Peak Hour			PM Peak Hour		
No	Intersection	Control Type	Delay (sec/veh)	LOS	Warrant Met?	Delay (sec/veh)	LOS	Warrant Met?
1	Caldwell Avenue/Burke Street	TWSC	OVRFL	F	No	OVRFL	F	No
2	Caldwell Avenue/Ben Maddox Way	Signal	27.2	C	--	45.5	D	--
3	Caldwell Avenue/Edison Street	TWSC	11.3	B	No	15.9	C	No
4	Russel Avenue/Burke Street	TWSC	9.3	A	No	9.2	A	No
5	Cameron Avenue/Burke Street	TWSC	8.5	A	No	8.6	A	No
6	Russel Avenue/Ben Maddox Way	TWSC	9.9	A	No	9.5	A	No
7	Cameron Avenue/Ben Maddox Way	TWSC	8.5	A	No	9.0	A	No
8	Reese Avenue/Bradley Street	TWSC	8.5	A	No	8.5	A	No

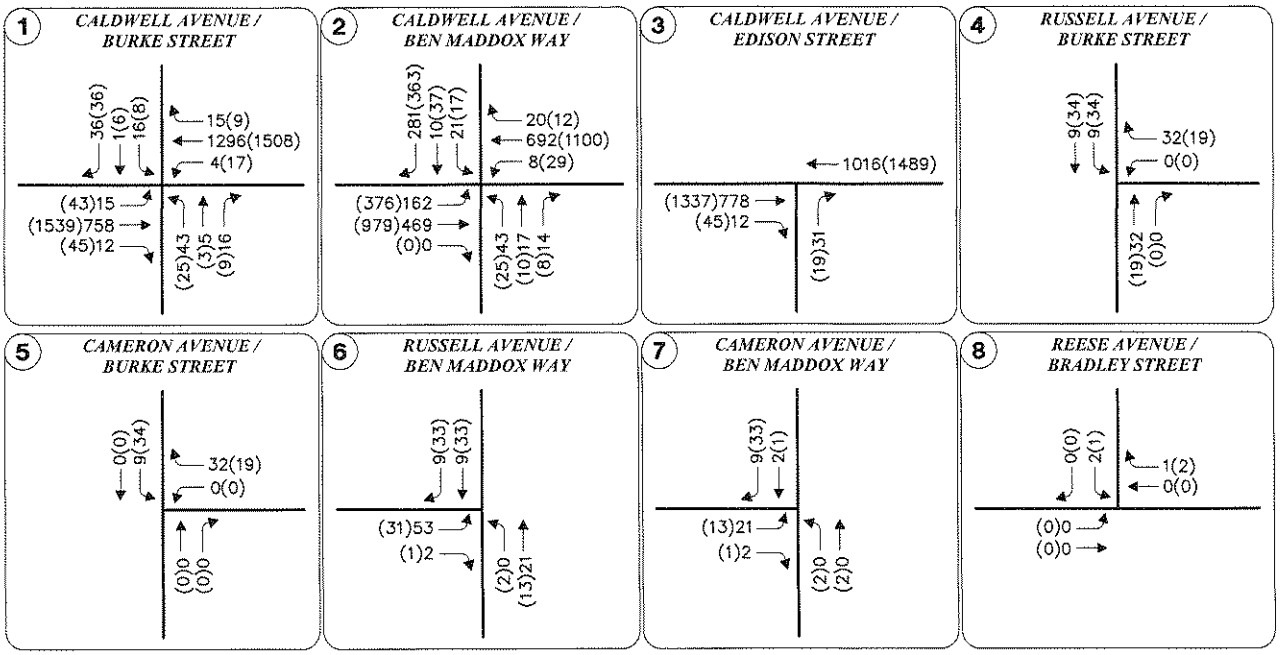
Legend: *TWSC = Two-Way-Stop Control. AWSC = All-Way Stop Control.*
Average Delay = Average Intersection Delay for Signalized Intersections.
Average Delay = Worst-Case Minor Street Approach Delay for TWSC Intersections.
LOS = Average Intersection Level-of-Service for Signalized Intersections.
LOS = Worst-Case Minor Street Approach Level-of-Service for TWSC Intersections.
Warrant = MUTCD Peak-Hour Warrant-3.
OVRFL = Overflow conditions (> 100 seconds delay).

As shown in Table 7, the intersection at Caldwell Avenue/Burke Street is projected to operate at LOS "F" conditions under AM and PM peak hour periods for "Year 2035 Base plus Project" conditions. The unsignalized intersection at Caldwell Avenue/Burke Street is not projected to meet the MUTCD Peak Hour Warrant 3 under projected "Year 2035 Base plus Project" AM and PM peak hour volume conditions. The final decision to install a traffic signal should be based on further studies utilizing the additional warrants presented in the MUTCD, including, but not limited to:

- Warrant 1; Eight-Hour Vehicular Volume
- Warrant 2; Four-Hour Vehicular Volume

The higher volume minor street approach volumes at the Caldwell Avenue/Burke Street intersection are 64 and 53 under Year 2035 Base plus Project AM and PM peak hour conditions, respectively. As previously mentioned the eight-hour and four-hour vehicular volume warrants have lower thresholds of 53 vehicles (for eight hours), and 60 vehicles (for four hours), respectively. Since both the AM and PM peak hour higher volume minor street approach are projected to experience volumes at or near these lower thresholds, further study would be needed under post project cumulative conditions to determine if these warrants are met.

All mitigation measures are discussed in the following section of this report.

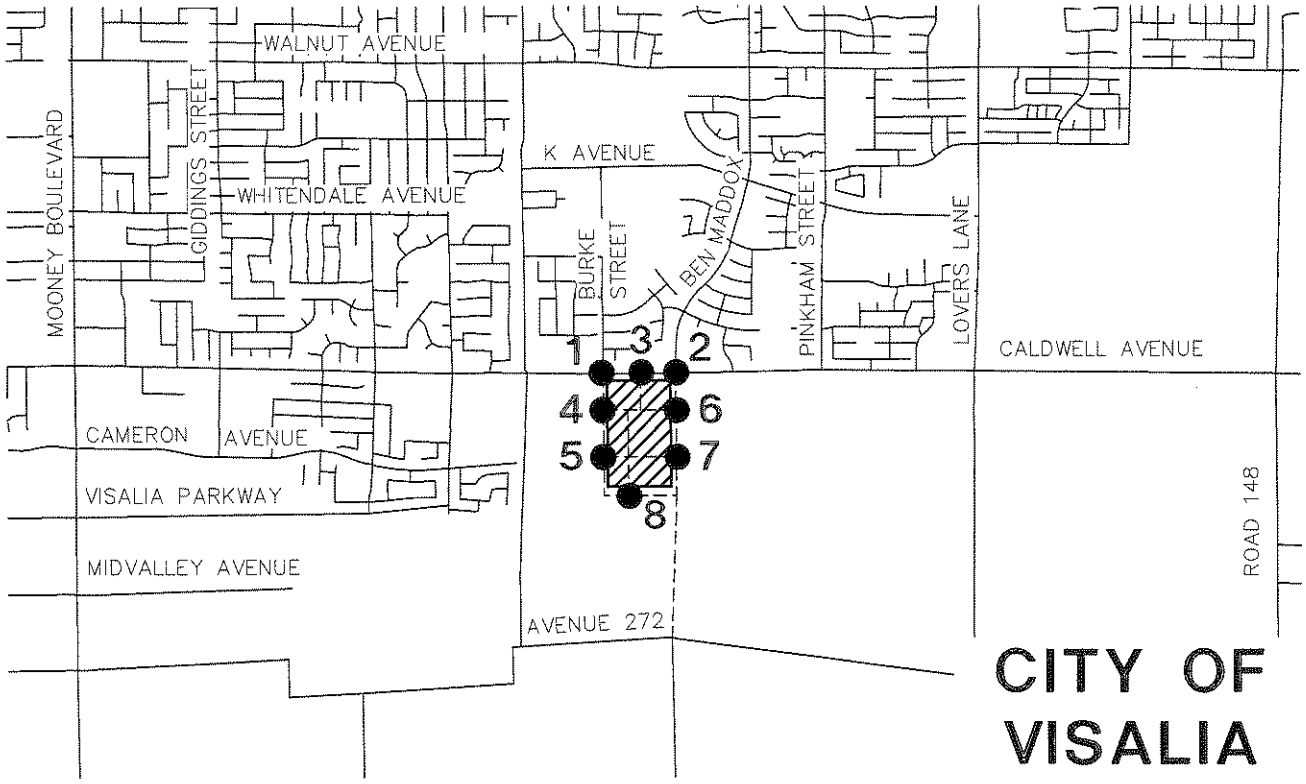


LEGEND:

XX – AM PEAK HOUR TRAFFIC VOLUMES

(XX) – PM PEAK HOUR TRAFFIC VOLUMES

▨ – PROJECT LOCATION



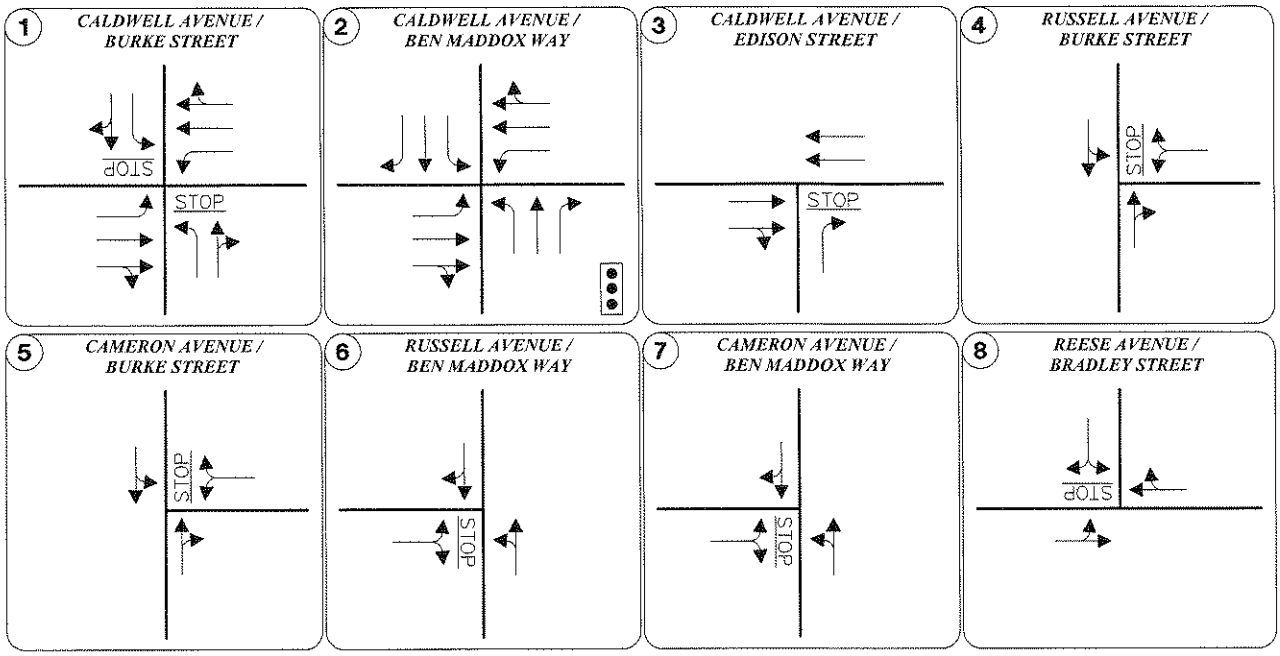
CITY OF VISALIA

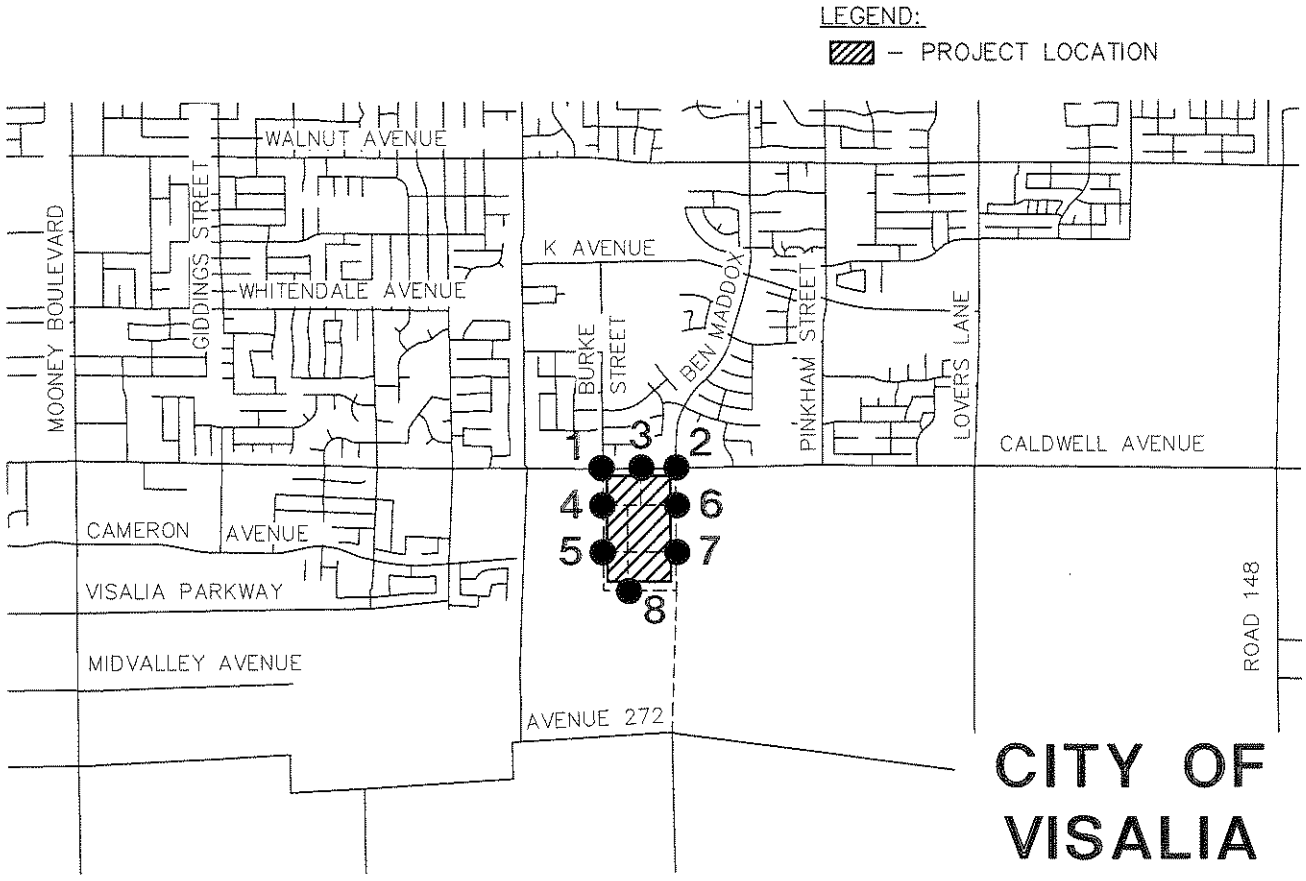
Diamond Oaks TIAR

Figure 6

Year 2035 Base plus Project Traffic Volumes

t1639tg003.dwg/092012/55-2454-01





CITY OF VISALIA

Diamond Oaks TIAR

Figure 7

Year 2035 Base plus Project Lane Geometrics and Control

t1639tg003.dwg/092012/55-2454-01

RECOMMENDED MITIGATION MEASURES

This section presents a list of recommended mitigation measures at the study intersections and roadways based upon the results of the analysis presented in this report. All of the study intersections are projected to operate at acceptable LOS "D" conditions or better through 2035 with implementation of the recommended mitigation measures identified below.

At the end of this section, Figure 8 identifies mitigated lane geometrics and control to achieve acceptable operating conditions at the study intersections. Because the mitigation measures are recommended for buildout in Year 2035 and generally do not provide an implementation year, the study intersections requiring mitigation to achieve acceptable LOS should be monitored on a regular basis by the City of Visalia. TCAG has an annual traffic monitoring program that could be used to collect LOS at these intersections.

EXISTING CONDITIONS

Under "Existing" conditions the following mitigation measures are recommended:

Caldwell Avenue/Burke Street: The southbound approach at this intersection is currently operating at PM peak hour LOS "E". Although not currently warranted based upon CAMUTCD peak hour volume Warrant 3, the installation of a traffic signal at this intersection would result in acceptable LOS during existing peak hour conditions. The traffic signal should be installed to accommodate the ultimate widening of the intersection, or installed concurrent with the ultimate intersection improvements.

The ultimate intersection geometrics would consist of separate left-turns, and shared thru-right lanes on the north/south (Burke Street) legs, and a separate left, thru, and shared thru-right on the east/west (Caldwell Avenue) legs.

If a traffic signal were to be installed prior to the ultimate intersection improvements being constructed, it would operate at acceptable LOS with a shared left-thru-right lane with split or permitted phasing on the north/south approaches, with dedicated left-turn lane, and shared thru-right lanes with protected phasing on the east/west approaches.

EXISTING PLUS PHASE I CONDITIONS

With the mitigation measures recommended under "Existing" conditions in-place, the study intersections would operate at acceptable peak hour LOS under "Existing plus Phase I" conditions. Under "Existing plus plus Phase I" conditions, the following mitigation measures have been identified:

Project Driveway intersections: Based upon the site plan, it is recommended that the future intersections of Russel Avenue/Burke Street and Cameron Avenue/Burke Street operate as stop controlled intersection on the westbound approach with shared turning movements. It is also recommended that the north-south approaches on Burke Street have thru-shared lanes into these access points.

Project Access

It should be noted that the first and second phases of the project, consisting of 175 total units (including a combination of multi-family, single family, and triplex units), will be served by two access points to Caldwell Avenue. Caldwell Avenue will serve as the only roadway which from the site can be accessed. The Caldwell Avenue/Burke Street intersection would provide full access, while right-turn only access

would be permitted at the Caldwell Avenue intersection at Edison Street. Edison Street will connect to Caldwell Avenue approximately mid-way between Ben Maddox Way and Burke Street.

Since the Caldwell Avenue/Burke Street intersection will serve as the only full access point to/from the development site, traffic congestion may result, without the provision for any alternative routes (specifically for left-turn movements in and out of the project site). It is recommended that the installation of a traffic signal to mitigate project related traffic congestion at the Caldwell Avenue/Burke Street intersection be strongly considered. If a traffic signal is not installed, traffic at this location should be monitored on an ongoing basis, as phases of the project are occupied to determine when the intersection operations warrant the installation of a traffic signal.

YEAR 2035 BASE CONDITIONS

Under "Year 2035 Base" conditions, it is assumed that mitigation measures recommended under "Existing" and "Existing plus Phase I" conditions, in addition to the improvements assumed to be "in-place" by Year 2035, have been implemented. Therefore, no further mitigation measures are necessary.

YEAR 2035 BASE PLUS PROJECT CONDITIONS

Under "Year 2035 Base plus Project" conditions, it is assumed that mitigation measures recommended under "Existing" and "Existing plus Phase I" conditions, in addition to the improvements assumed to be "in-place" by Year 2035, have been implemented. Under "Year 2035 Base plus Project" the following mitigation measures are recommended:

Caldwell Avenue/Ben Maddox Way intersection: This intersection does not require mitigation, however, there are project trips assigned to the ultimate southerly extension of Ben Maddox Way under Year 2035 Base plus Project conditions. Should the project build-out occur prior to the southerly extension of Ben Maddox Way, Burke Street would remain the primary access point to the project. In this case, 104 AM peak hour and 148 PM peak hour trips would be re-assigned to the Caldwell Avenue/Burke Street intersection, resulting in AM and PM peak hour LOS 'B'. The resulting LOS at the Caldwell Avenue/Ben Maddox Way intersection would be LOS 'C, and LOS 'D' during the AM and PM peak hours, respectively.

It is expected that the southerly extension of Ben Maddox Way would be constructed when the adjacent property to the east of the proposed Diamond Oaks subdivision develops. For this reason, assigning a timeframe to the southerly extension of Ben Maddox Way cannot be done with any certainty.

Caldwell Avenue/Edison Street intersection: Based upon the site plan, it is recommended that the Caldwell Avenue/Edison Street intersection be a right turn only intersection between Burke Street and Ben Maddox Way. Northbound and westbound left-turn movements should be prohibited at this intersection to maintain the integrity of this major arterial in south Visalia.

Russell Avenue/Ben Maddox Way and Cameron Avenue/Ben Maddox Way intersections: Based upon the site plan, it is recommended that these two intersections be stop controlled with shared turning movements on the eastbound approach. In addition, Ben Maddox Way should have a shared left-thru lane on the northbound approaches and a shared thru-right lane on the southbound approaches.

Reese Avenue/Bradley Street intersection: Install a stop controlled intersection on the southbound approach of Bradley Street. Furthermore, it is recommended that the eastbound and westbound approaches on Reese Avenue have shared thru-left/right movements into the project site.

PRO RATA SHARE CALCULATIONS

Table 8 identifies the pro rata share calculations as documented in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002). The method for calculating equitable mitigation measures is as follows:

$$P=T/(T_B - T_E)$$

Where:

- P = The equitable share for the proposed project's traffic impact.
- T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph).
- T_B = The forecasted traffic volume on a impacted State highway facility at the time of general plan build-out (e.g., 20 year model or the furthest future model date feasible), vph.
- T_E = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

TABLE 8
PRO RATA SHARE CALCULATIONS

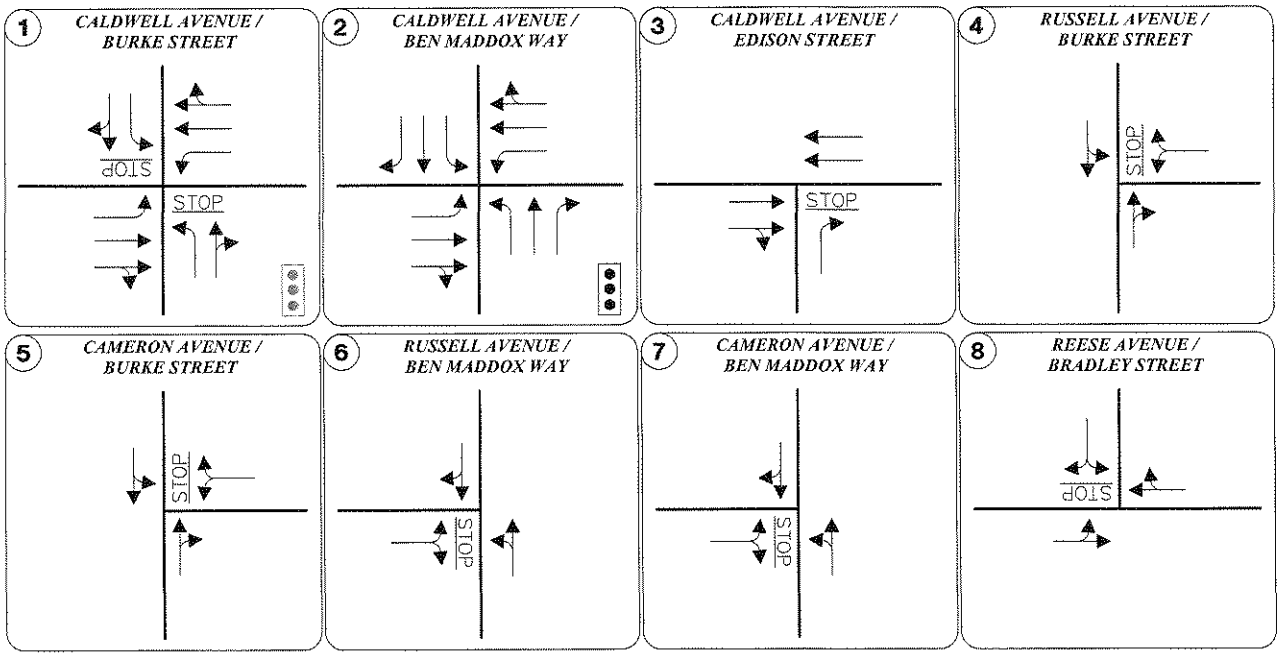
Intersection	Existing	2035 General Plan Buildout	Project Trips	Pro Rata %
Caldwell Avenue/Burke Street	2,069	3,073	175	17.4

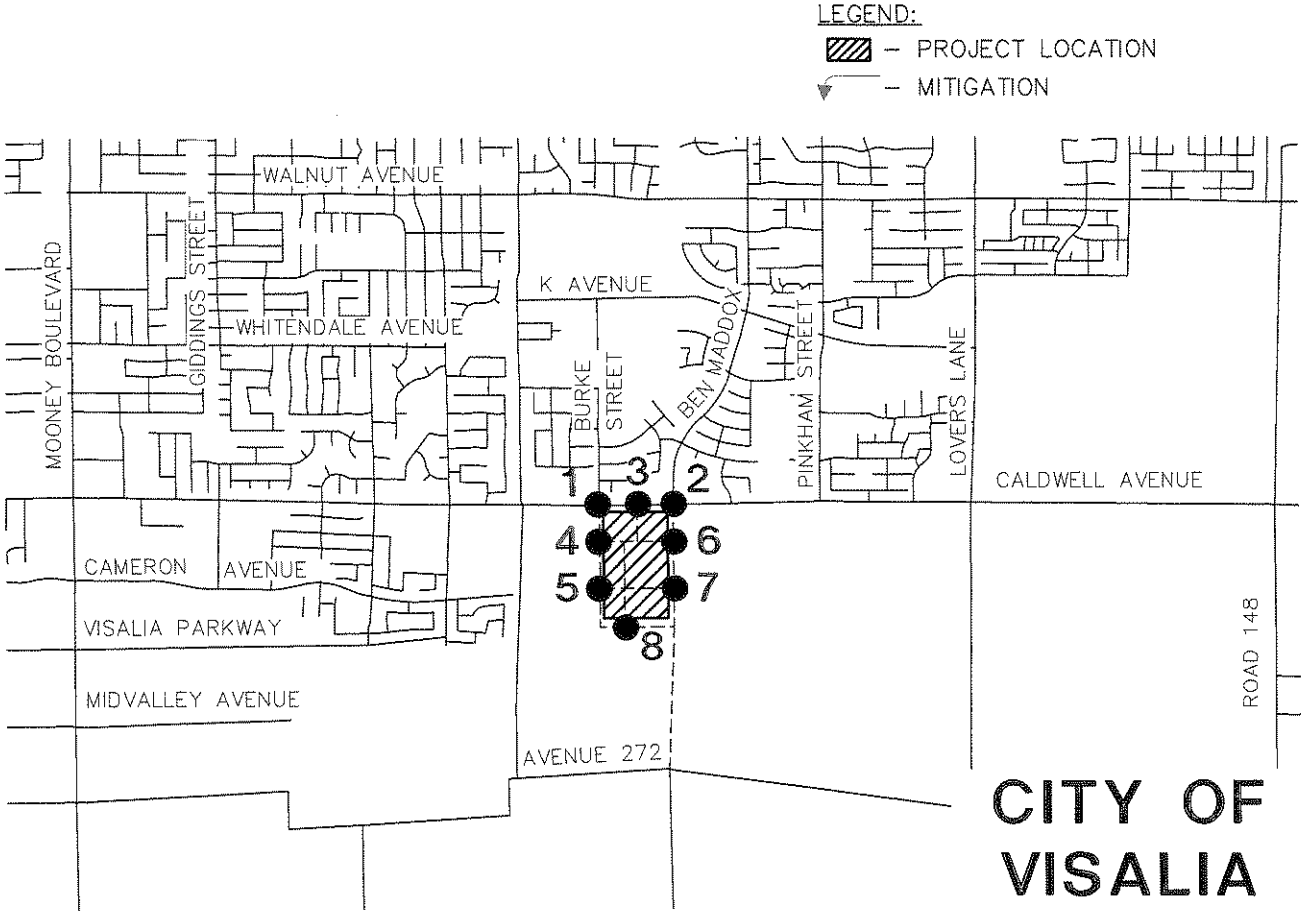
As shown in Table 8, the proposed project will generate a portion of PM peak hour trips that will contribute to the deficiencies identified above.

According to the methodology described in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002), Table 10 is neither intended as, nor does it establish a legal standard for determining equitable responsibility and cost of the project's traffic impact; the intent is to provide:

1. A starting point for early discussions to address traffic mitigation equitably;
2. A means for calculating the equitable share for mitigating traffic impacts; and
3. A means for establishing rough proportionality [Dolan vs. City of Tigard, 1994, 512 U.S. 374 (114 S. Ct. 2309)].

According to the Caltrans' *Guide for Preparation of Traffic Impact Studies* (December 2002), the method for calculating equitable mitigation measures ". . . is not intended for circumstances where a project proponent will be receiving a substantial benefit from the identified mitigation measure. In these cases, the project should take full responsibility toward providing the necessary infrastructure."





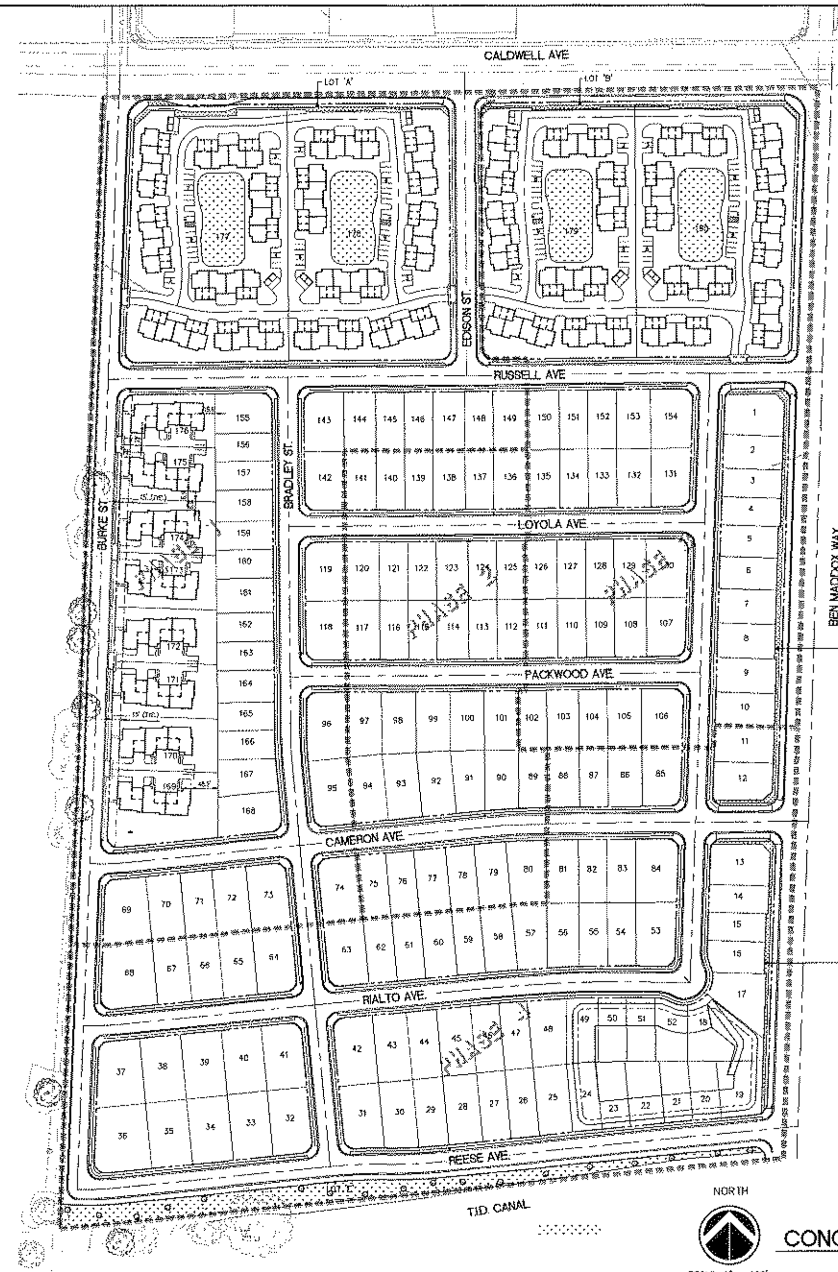
Diamond Oaks TIAR

Figure 8

Year 2035 Base plus Project Mitigated Lane Geometrics and Control

t1639tg003.dwg/092012/55-2454-01

Appendix
(Site Plan)



DIAMOND OAKS CONCEPTUAL PHASING PLAN

LEGAL DESCRIPTION

Being a portion of the Northeast quarter of Section 8, Township 19 South, Range 25 East, Mount Diablo Base and Meridian, in the City of Visalia, County of Tulare, State of California

OWNER/DEVELOPER

DIAMOND OAKS, LP
220 SOUTH MOONEY BLVD
VISALIA, CA 93291
(559) 625-6572

SITE DATA

SITE PLAN REVIEW NO.	10-061
A.P.N.	126-100-12
GROSS SITE AREA	455.7 ACRES
ZONING	R-1-6, R-M-2, R-M-3
EXISTING USE	VACANT
PROPOSED USE	RESIDENTIAL
FLOOD ZONE	"X"
ELECTRIC	SOUTHERN CALIFORNIA EDISON CO.
WATER	CALIFORNIA WATER SERVICE CO.
GAS	THE GAS CO.
SEWER/STORM	CITY OF VISALIA
SOLID WASTE	CITY OF VISALIA

PHASING PLAN SUMMARY

	LAND USE	NO. OF LOTS	NO. OF UNITS
PHASE 1	MULTIPLE FAMILY RESIDENTIAL	2	84
	TRIPLEX UNITS	8	24
	SINGLE FAMILY RESIDENTIAL	32	32
	PHASE 1 TOTAL	42	140
PHASE 2	MULTIPLE FAMILY RESIDENTIAL	0	0
	TRIPLEX UNITS	0	0
	SINGLE FAMILY RESIDENTIAL	35	35
	PHASE 2 TOTAL	35	35
PHASE 3	MULTIPLE FAMILY RESIDENTIAL	2	84
	TRIPLEX UNITS	0	0
	SINGLE FAMILY RESIDENTIAL	35	35
	PHASE 3 TOTAL	37	119
PHASE 4	MULTIPLE FAMILY RESIDENTIAL	0	0
	TRIPLEX UNITS	0	0
	SINGLE FAMILY RESIDENTIAL	55	55
	NON-BUILDABLE SFR	11	11
	PHASE 4 TOTAL	66	66
	GRAND TOTAL	180	360

NO.	DATE	REVISIONS
1	4/23/13	REV. PH 1 & 2 BOUNDARIES

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — CIVIL

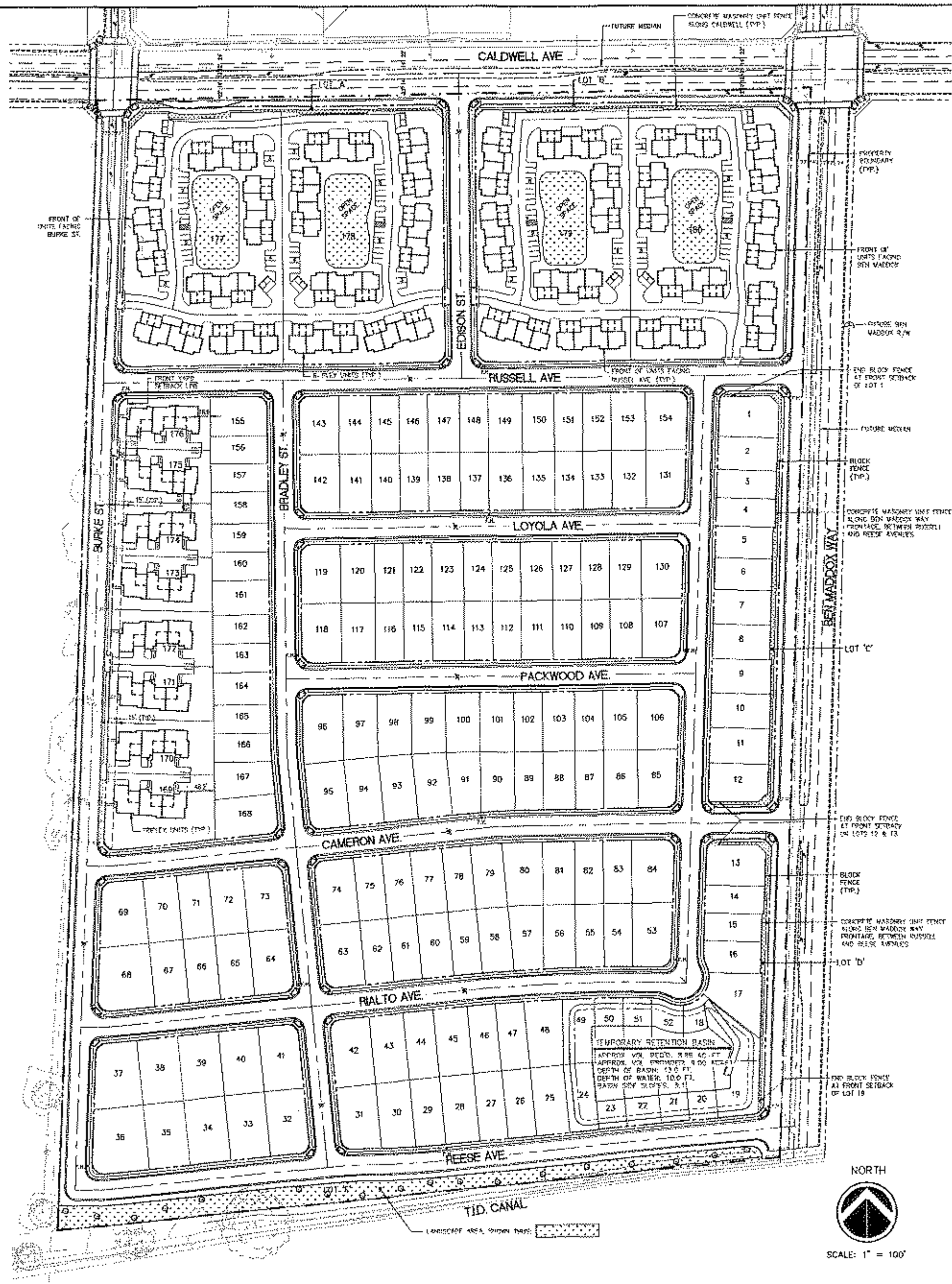
LANE ENGINEERS INC.
CIVIL • STRUCTURAL • SURVEYING
979 N. Blackstone Street
Tulare, California 93274
(559) 688-5283

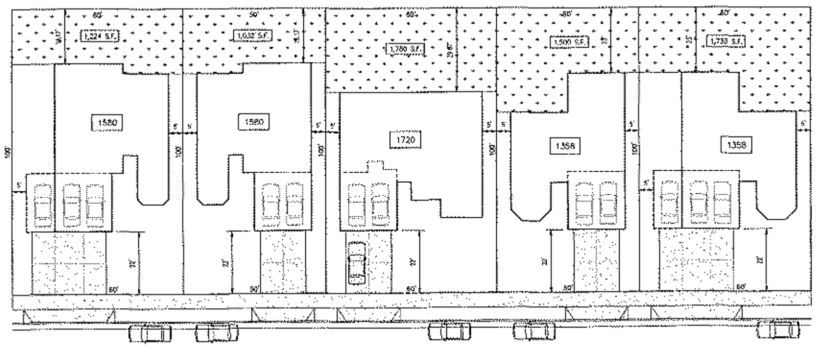
A CONCEPTUAL PHASING PLAN FOR:

DIAMOND OAKS, LP

VISALIA, CALIFORNIA

NAME	APG
DATE	1-18-13
SCALE	NOTED
CHECKED	LJS
SHEET	PH1.1
OF	1 SHEETS
JOB NO.	10192





REPRESENTATIVE SINGLE FAMILY STREET SCENE

SCALE: 1" = 20'

PROPOSED MINIMUM BUILDING SETBACKS

FRONT YARD: 22' (FRONT LOADING GARAGE)
REAR YARD: 15' (SINGLE-STORY AND TWO-STORY)
SIDE YARD: 5' (SINGLE-STORY AND TWO-STORY)

PROPOSED MINIMUM REAR YARD AREA

1,000 S.F.

SITE SUMMARY

GROSS SITE AREA: (BLUELINE)	55.9 ACRES
TOTAL NUMBER OF SFR LOTS (1-168):	168
TOTAL SFR LOT AREA:	1,068,233 S.F. 24.52 ACRES
TOTAL NUMBER OF TRIPLEX LOTS (169-176):	8
TOTAL TRIPLEX LOT AREA:	140,061 S.F. 3.22 ACRES
TOTAL NUMBER OF MFR LOTS (177-180):	4
TOTAL MFR LOT AREA:	485,351 S.F. 11.14 ACRES
TOTAL NUMBER OF OUTLOTS (A-E):	5
TOTAL OUTLOT AREA:	64,610 S.F. 1.48 ACRES
TOTAL PROPOSED DWELLING UNITS:	360 UNITS
GROSS R-1-6 ACREAGE:	42.84 ACRES
NET R-1-6 ACREAGE:	29.86 ACRES
ALLOWABLE UNITS BASED ON R-1-6 ZONE: [(29.86 AC)x(7 UNITS/AC)]	209 UNITS
GROSS R-M-2 ACREAGE:	7.89 ACRES
NET R-M-2 ACREAGE:	7.45 ACRES
ALLOWABLE UNITS BASED ON R-M-2 ZONE: [(7.46 AC)x(15 UNITS/AC)]	111 UNITS
GROSS R-M-3 ACREAGE:	5.95 ACRES
NET R-M-3 ACREAGE:	5.75 ACRES
ALLOWABLE UNITS BASED ON R-M-3 ZONE:	166 UNITS
TOTAL ALLOWABLE DWELLING UNITS PER CURRENT ZONING AND GENERAL PLAN:	486 UNITS

LEGAL DESCRIPTION

Being a portion of the Northwest quarter of Section 8, Township 19 South, Range 25 East, Mount Diablo Base and Meridian, in the City of Visalia, County of Tulare, State of California

OWNER/DEVELOPER

DIAMOND OAKS, LP
210 SOUTH MOONEY BLVD
VISALIA, CA 93291
(559) 625-3372

SITE DATA

SITE PLAN REVIEW NO.	10-081
A.P.N.	126-100-32
GROSS SITE AREA	±55.9 ACRES
ZONING	R-1-6, R-M-2, R-M-3
EXISTING USE	VACANT
PROPOSED USE	RESIDENTIAL
FLOOD ZONE	"X"
ELECTRIC	SOUTHERN CALIFORNIA EDISON CO.
WATER	CALIFORNIA WATER SERVICE CO.
GAS	THE GAS CO.
SEWER/STORM	CITY OF VISALIA
SOLID WASTE	CITY OF VISALIA

DIAMOND OAKS
CONCEPTUAL PLANNED RESIDENTIAL DEVELOPMENT PLAN

NO.	DATE	REVISIONS

PRELIMINARY — NOT FOR CONSTRUCTION — CIVIL — STATE OF CALIFORNIA

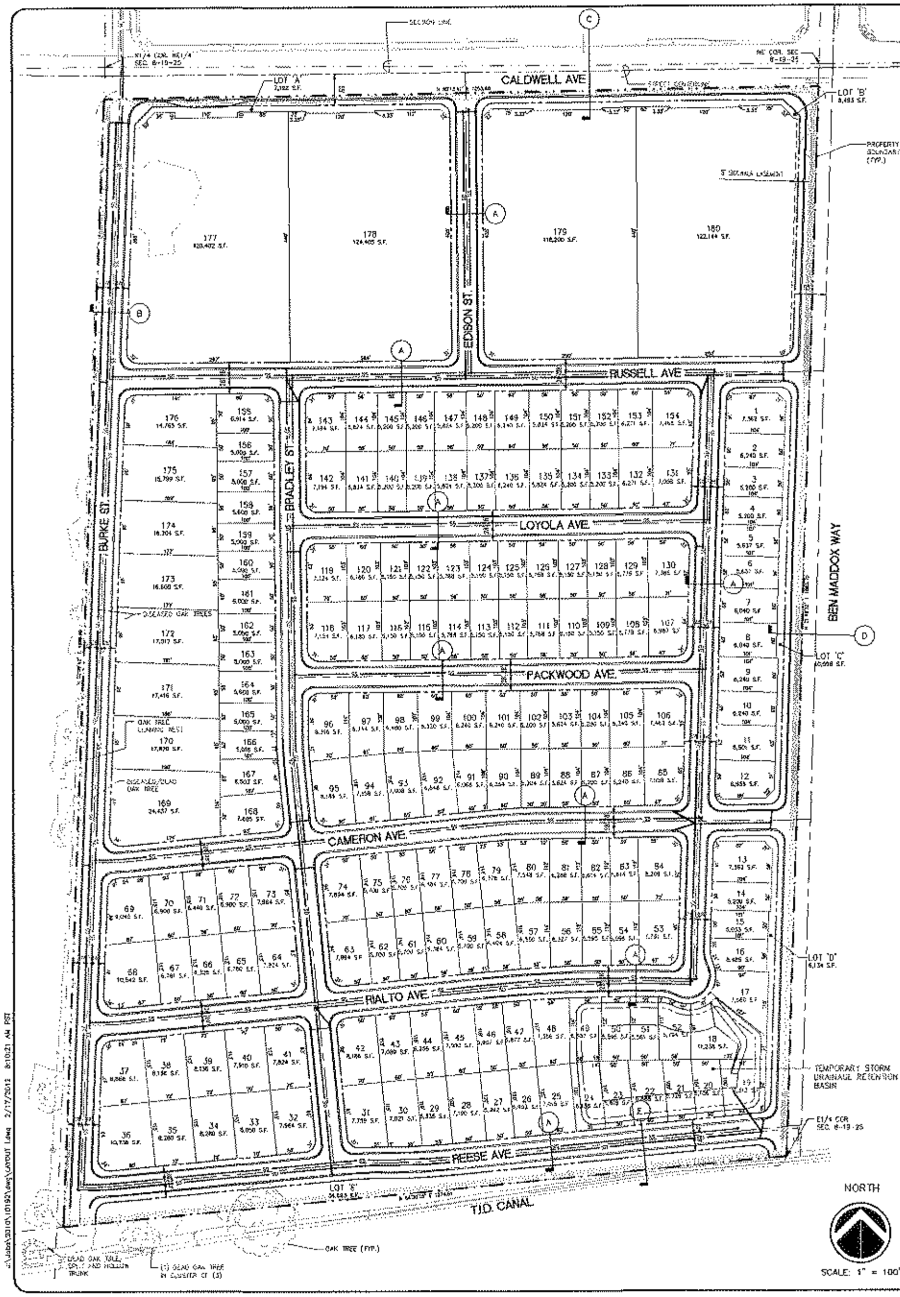
LANE ENGINEERS INC.
CIVIL • STRUCTURAL • SURVEYING
979 N. Blackstone Street
Tulare, California 93274
(559) 688-5263

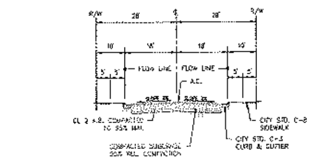
A CONCEPTUAL PRD PLAN FOR:

DIAMOND OAKS, LP

VISALIA, CALIFORNIA

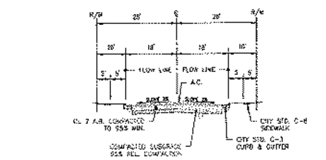
NAME	APO
DATE	5-10-12
SCALE	NOTED
CHECKED	LJS
SHEET	PRD1.1
OF	1 SHEETS
JOB NO.	10192





Ⓐ TYPICAL LOCAL STREET

NO SCALE



Ⓑ BURKE STREET

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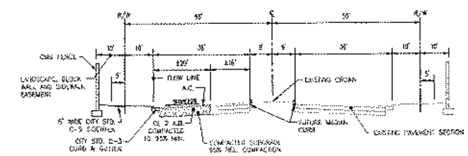

Ⓒ CALDWELL AVENUE

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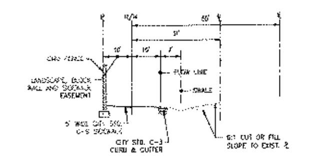
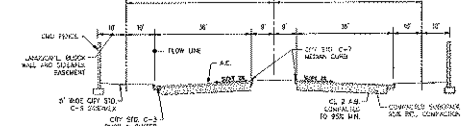


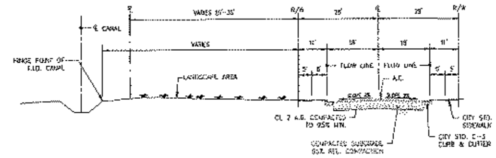
Ⓓ BEN MADDOX WAY (INTERIM)

NO SCALE



Ⓓ BEN MADDOX WAY (ULTIMATE)

NO SCALE



Ⓔ REESE AVE. & T.I.D. CANAL

SCALE 1"=20'

LEGAL DESCRIPTION

Being a portion of the Northeast quarter of Section 8, Township 19 South, Range 25 East, Mount Diablo Base and Meridian, in the City of Visalia, County of Tulare, State of California.

OWNER/DEVELOPER

DIAMOND OAKS, LP
210 SOUTH MOONEY BLVD.
VISALIA, CA 93291
(559) 625-8372

SITE DATA

SITE PLAN REVIEW NO.	10-051
A.P.N.	126-100-17
GROSS SITE AREA	±55.9 ACRES
ZONING	R-1-6, R-M-2, R-M-3
EXISTING USE	VACANT
PROPOSED USE	RESIDENTIAL
FLOOD ZONE	"X"
ELECTRIC	SOUTHERN CALIFORNIA EDISON CO.
WATER	CALIFORNIA WATER SERVICE CO.
GAS	THE GAS CO.
SEWER/STORM	CITY OF VISALIA
SOLID WASTE	CITY OF VISALIA

SITE SUMMARY

GROSS SITE AREA: (OUTLINE)	±55.9 ACRES
TOTAL NUMBER OF SFR LOTS (1-168):	168
TOTAL SFR LOT AREA:	1,068,233 S.F. 24.52 ACRES
TOTAL NUMBER OF TRIPLEX LOTS (169-176):	8
TOTAL TRIPLEX LOT AREA:	140,081 S.F. 3.22 ACRES
TOTAL NUMBER OF MFR LOTS (177-180):	4
TOTAL MFR LOT AREA:	485,151 S.F. 11.14 ACRES
TOTAL NUMBER OF OUTLOTS (A-E):	5
TOTAL OUTLOT AREA:	64,610 S.F. 1.48 ACRES

NOTE:
IT IS THE INTENTION OF THE SUBDIVIDER TO FILE MULTIPLE FINAL SUBDIVISION MAPS ON THIS TENTATIVE MAP.

DIAMOND OAKS
VESTING TENTATIVE SUBDIVISION MAP
FOR A PLANNED RESIDENTIAL DEVELOPMENT

NO.	DATE	REVISIONS

PRELIMINARY NOT FOR CONSTRUCTION

LANE ENGINEERS INC.
CIVIL • STRUCTURAL • SURVEYING
979 N. Blackstone Street
Tulare, California 93274
(559) 688-5263

VESTING TENTATIVE SUBDIVISION MAP FOR:
DIAMOND OAKS, LP
VISALIA, CALIFORNIA

NAME	APO
DATE	5-10-12
SCALE	NOTED
CHECKED	LJS
SHEET	SP1.1
OF 1 SHEETS	
JOB NO.	10192

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Technical Appendix
(Available Upon Request)

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Scenario Report

Scenario:	AM Phase I
Command:	Default Command
Volume:	AM Peak
Geometry:	Phase I
Impact Fee:	Default Impact Fee
Trip Generation:	AM Peak
Trip Distribution:	Existing plus Phase I
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Trip Generation Report

Forecast for AM Peak

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1		94.00	AM Peak	0.21	0.79	20	74	94	100.0
	Zone 1 Subtotal					20	74	94	100.0
TOTAL						20	74	94	100.0

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Trip Distribution Report

Percent Of Trips Default

	To Gates								
Zone	1	2	3	4	6	7	8	10	11
1	10.0	8.0	22.0	20.0	5.0	5.0	5.0	20.0	5.0

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Turning Movement Report
AM Peak

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Caldwell Avenue/Burke Street													
Base	0	0	0	11	0	27	11	406	0	0	684	8	1147
Added	37	6	16	0	2	0	0	1	9	8	0	0	79
Total	37	6	16	11	2	27	11	407	9	8	684	8	1226
#2 Caldwell Avenue/Ben Maddox Way													
Base	0	0	0	15	0	199	97	320	0	0	493	14	1138
Added	0	0	0	0	0	4	16	15	0	0	4	0	39
Total	0	0	0	15	0	203	113	335	0	0	497	14	1177
#3 Caldwell Avenue/Edison Street													
Base	0	0	0	0	0	0	0	417	0	0	692	0	1109
Added	0	0	15	0	0	0	0	16	1	0	8	0	40
Total	0	0	15	0	0	0	0	433	1	0	700	0	1149
#4 Russell Ave/Burke St													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	12	0	15	4	0	0	0	0	0	0	47	78
Total	0	12	0	15	4	0	0	0	0	0	0	47	78
#5 Cameron Ave/Burke St													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	4	0	0	0	0	0	0	0	12	16
Total	0	0	0	4	0	0	0	0	0	0	0	12	16
#6 Russell Ave/Ben Maddox Way													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
#7 Cameron Ave/Ben Maddox Way													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
#8													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Caldwell Avenue/Burke Street	C	18.2	0.071	E	37.0	0.300	+18.801 D/V
# 2 Caldwell Avenue/Ben Maddox Way	B	19.8	0.539	C	20.5	0.556	+ 0.664 D/V
# 3 Caldwell Avenue/Edison Street	A	0.0	0.000	B	10.9	0.024	+10.886 D/V
# 4 Russell Ave/Burke St		0.0	0.000	A	9.3	0.015	+ 9.303 D/V
# 5 Cameron Ave/Burke St		0.0	0.000	A	8.5	0.004	+ 8.514 D/V

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 1 Caldwell Avenue/Burke Street	No / No	No / No
# 3 Caldwell Avenue/Edison Street	No / No	No / No
# 4 Russell Ave/Burke St	No / No	No / No
# 5 Cameron Ave/Burke St	No / No	No / No

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

****

Intersection #1 Caldwell Avenue/Burke Street

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0			1 0 0 1 0		
Initial Vol:	0	0	0	11	0	27	11	406	0	0	684	8
ApproachDel:	xxxxxx			18.2			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=38]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1147]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #1 Caldwell Avenue/Burke Street

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0			1 0 0 1 0		
Initial Vol:	0	0	0	11	0	27	11	406	0	0	684	8

Major Street Volume: 1109
Minor Approach Volume: 38
Minor Approach Volume Threshold: 249

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #1 Caldwell Avenue/Burke Street

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0	0	0	1!	0	0	0	1	0	0	0	1	0
Initial Vol:	37		6		16		11		2		27		11	407		9
ApproachDel:	37.0				22.0				xxxxxx				xxxxxx			

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=59]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1226]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=40]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1226]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #1 Caldwell Avenue/Burke Street

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0	0	0	1!	0	0	0	1	0	0	0	1	0
Initial Vol:	37		6		16		11		2		27		11	407		9

Major Street Volume: 1127
Minor Approach Volume: 59
Minor Approach Volume Threshold: 244

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #3 Caldwell Avenue/Edison Street

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Initial Vol:	0		0		0		0		0	417		0	0	692		0
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report (Urban)

Intersection #3 Caldwell Avenue/Edison Street

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Initial Vol:	0		0		0		0		0	417		0	0	692		0

Major Street Volume: 1109
Minor Approach Volume: 0
Minor Approach Volume Threshold: 192

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #3 Caldwell Avenue/Edison Street

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	0	1	0		0	0	1	0	0	
Initial Vol:	0		0		15		0		0		0		0		433		1		0		700		0	
ApproachDel:	10.9						xxxxxx						xxxxxx						xxxxxx					

Approach[northbound][lanes=1]{control=Stop Sign]
Signal Warrant Rule #1: {vehicle-hours=0.0}
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=15]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1149]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #3 Caldwell Avenue/Edison Street

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	0	1	0		0	0	1	0	0	
Initial Vol:	0		0		15		0		0		0		0		433		1		0		700		0	

Major Street Volume: 1134
Minor Approach Volume: 15
Minor Approach Volume Threshold: 186

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #4 Russell Ave/Burke St

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	1	0	0		0	1	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
ApproachDel:	0.0						0.0						0.0						0.0					

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #4 Russell Ave/Burke St

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	1	0	0		0	1	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		0		0		0		0		0		0		0		0		0		0		0	

Major Street Volume: 0
Minor Approach Volume: 0
Minor Approach Volume Threshold: +Inf

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

****

Intersection #4 Russell Ave/Burke St

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	12		0	15	4		0	0	0		0	0	0		47
ApproachDel:		9.3				8.7				xxxxxx				xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=12]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=78]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=19]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=78]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #4 Russell Ave/Burke St

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	12		0	15	4		0	0	0		0	0	0		47

Major Street Volume: 47
Minor Approach Volume: 19
Minor Approach Volume Threshold: 1035

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #5 Cameron Ave/Burke St

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
ApproachDel:	0.0				0.0				0.0				0.0			

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #5 Cameron Ave/Burke St

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	0	0		0	0	0		0	0	0		0	0	0	

Major Street Volume: 0
Minor Approach Volume: 0
Minor Approach Volume Threshold: +Inf

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #5 Cameron Ave/Burke St

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		0		0		4		0		0		0		0		0		0		0		12	
ApproachDel:	xxxxxx						8.5						xxxxxx						xxxxxx					

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=4]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=16]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #5 Cameron Ave/Burke St

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		0		0		4		0		0		0		0		0		0		0		12	

Major Street Volume: 12
Minor Approach Volume: 4
Minor Approach Volume Threshold: 1399

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Caldwell Avenue/Burke Street

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[18.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0 1!	0	0	0	0 1!	0	0	1	0	0	1	0	1	0	0
Volume Module:																
Base Vol:	0	0	0	11	0	27	11	406	0	0	684	8				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	11	0	27	11	406	0	0	684	8				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				
PHF Volume:	0	0	0	12	0	29	12	441	0	0	743	9				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	12	0	29	12	441	0	0	743	9				
Critical Gap Module:																
Critical Gp:	7.1	6.5	6.2	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	1228	1217	441	1213	1213	748	752	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	154	180	614	200	181	411	844	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	142	177	614	198	178	411	844	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	0.00	0.00	0.00	0.06	0.00	0.07	0.01	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*				
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	0	xxxxx	xxxx	313	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	18.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				18.2		xxxxxx			xxxxxx						
ApproachLOS:	*				C		*			*						

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #1 Caldwell Avenue/Burke Street

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	3%				3%				5%				5%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:													#6			
Dist(miles):													0.000			
Speed (mph):													0.00			
SignalIndex:													#2			
Cycle Time:																0 secs
InitVolume:													0	0		
Saturation:													0	0		
ArrivalType:													0	0		
G/C:													0.00	0.00		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
p:													0.000	0.000		
gq1:													0.00	0.00		
gq2:													0.00	0.00		
gq:													0.00	0.00		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:													0.000			
beta:													0.000			
ta (secs):													0.000			
F:													0.000			
f:													0.000	0.000		
vcmax:													0	0		
vcg:													0	0		
vcmin:													0	0		
tp:													0.0	0.0		
p:														0.000		
*** Computation 3: Platoon Event Periods																
pdom/psubc:													0.000/0.000/Unconstrained			
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	1228	1217	441	1213	1213	748	752	xxxxx	xxxxx	0	xxxxx	xxxxx				
AdjCnflVol:	1228	1217	441	1213	1213	748	752	xxxxx	xxxxx	0	xxxxx	xxxxx				
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx				
ConflictVol:	1228	1217	441	1213	1213	748	752	xxxxx	xxxxx	0	xxxxx	xxxxx				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	154	180	614	200	181	411	844	xxxxx	xxxxx	1604	xxxxx	xxxxx				
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx				
Potent Cap.:	154	180	614	200	181	411	844	xxxxx	xxxxx	1604	xxxxx	xxxxx				

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Caldwell Avenue/Burke Street

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: E[37.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			1 0 0 1 0			1 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	11	0	27	11	406	0	0	684	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	11	0	27	11	406	0	0	684	8
Added Vol:	37	6	16	0	2	0	0	1	9	8	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	37	6	16	11	2	27	11	407	9	8	684	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	40	7	17	12	2	29	12	442	10	9	743	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	40	7	17	12	2	29	12	442	10	9	743	9
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1252	1241	447	1248	1241	748	752	xxxx	xxxxx	452	xxxx	xxxxx
Potent Cap.:	148	174	609	149	174	411	844	xxxx	xxxxx	1093	xxxx	xxxxx
Move Cap.:	134	170	609	138	170	411	844	xxxx	xxxxx	1093	xxxx	xxxxx
Volume/Cap:	0.30	0.04	0.03	0.09	0.01	0.07	0.01	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.3	xxxx	xxxxx	8.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	175	xxxxx	xxxx	255	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.6	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	37.0	xxxxx	xxxxx	22.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	*	C	*	*	*	*	*	*	*
ApproachDel:		37.0			22.0			xxxxxx			xxxxxx	
ApproachLOS:		E			C			*			*	

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #1 Caldwell Avenue/Burke Street

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	3%			3%			5%			5%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			12 feet			12 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:										#6		
Dist(miles):										0.000		
Speed (mph):										0.00		
SignalIndex:										#2		
Cycle Time:												0 secs
InitVolume:										0	0	
Saturation:										0	0	
ArrivalType:										0	0	
G/C:										0.00	0.00	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
p:										0.000	0.000	
gq1:										0.00	0.00	
gq2:										0.00	0.00	
gq:										0.00	0.00	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:										0.000		
beta:										0.000		
ta (secs):										0.000		
F:										0.000		
f:										0.000	0.000	
vcmax:										0	0	
vcg:										0	0	
vcmin:										0	0	
tp:										0.0	0.0	
p:											0.000	
*** Computation 3: Platoon Event Periods												
pdom/psubo:										0.000/0.000/Unconstrained		
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1252	1241	447	1248	1241	748	752	xxxxx	xxxxx	452	xxxxx	xxxxx
AdjCnflVol:	1252	1241	447	1248	1241	748	752	xxxxx	xxxxx	452	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	1252	1241	447	1248	1241	748	752	xxxxx	xxxxx	452	xxxxx	xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period												
InitPotCap:	148	174	609	149	174	411	844	xxxxx	xxxxx	1093	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
Potent Cap.:	148	174	609	149	174	411	844	xxxxx	xxxxx	1093	xxxxx	xxxxx

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Caldwell Avenue/Ben Maddox Way

Cycle (sec):	100	Critical Vol./Cap.(X):	0.539
Loss Time (sec):	12	Average Delay (sec/veh):	19.8
Optimal Cycle:	43	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	15	0	199	97	320	0	0	493	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	15	0	199	97	320	0	0	493	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	16	0	216	105	348	0	0	536	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	16	0	216	105	348	0	0	536	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	16	0	216	105	348	0	0	536	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1805	0	1615	1805	1900	0	0	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.13	0.06	0.18	0.00	0.00	0.28	0.01
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.25	0.00	0.25	0.11	0.63	0.00	0.00	0.52	0.52
Volume/Cap:	0.00	0.00	0.00	0.04	0.00	0.54	0.54	0.29	0.00	0.00	0.54	0.02
Delay/Veh:	0.0	0.0	0.0	28.5	0.0	34.1	45.2	8.4	0.0	0.0	16.4	11.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	28.5	0.0	34.1	45.2	8.4	0.0	0.0	16.4	11.5
LOS by Move:	A	A	A	C	A	C	D	A	A	A	B	B
HCM2kAvgQ:	0	0	0	0	0	6	4	5	0	0	11	0

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Lane Group:	xxxx	xxxx	xxxx	L	xxxx	R	L	T	xxxx	xxxx	T	R
#LnsInGrps:	0	0	0	1	0	1	1	1	0	0	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	xxxx	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	xxxx	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Hev Veh Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < Actuated > > > > > > > > > > > > >											
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.00	0.00	0.25	0.00	0.25	0.11	0.63	0.00	0.00	0.52	0.52
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.0	0.0	0.0	0.3	0.0	5.2	2.8	4.4	0.0	0.0	9.9	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Q2:	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.4	0.0	0.0	1.1	0.0
HCM2kQueue:	0.0	0.0	0.0	0.4	0.0	6.3	3.8	4.8	0.0	0.0	11.0	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.19	1.19	1.19	1.20	1.20	1.18	1.20
HCM2k70thQ:	0.0	0.0	0.0	0.5	0.0	7.5	4.6	5.7	0.0	0.0	13.0	0.3
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.54	1.56	1.56	1.60	1.60	1.51	1.60
HCM2k85thQ:	0.0	0.0	0.0	0.6	0.0	9.8	6.0	7.4	0.0	0.0	16.6	0.4
90th%Factor:	1.80	1.80	1.80	1.79	1.80	1.69	1.73	1.72	1.80	1.80	1.63	1.80
HCM2k90thQ:	0.0	0.0	0.0	0.7	0.0	10.7	6.6	8.2	0.0	0.0	18.0	0.4
95th%Factor:	2.10	2.10	2.10	2.09	2.10	1.92	1.98	1.96	2.10	2.10	1.83	2.09
HCM2k95thQ:	0.0	0.0	0.0	0.8	0.0	12.2	7.6	9.3	0.0	0.0	20.1	0.5
98th%Factor:	2.70	2.70	2.70	2.67	2.70	2.31	2.44	2.39	2.70	2.70	2.13	2.68
HCM2k98thQ:	0.0	0.0	0.0	1.0	0.0	14.7	9.4	11.4	0.0	0.0	23.5	0.6

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Fuel Consumption and Emissions
2000 HCM Operations Method
Base Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	0.0	0.0	0.0	3.1	0.0	46.9	25.0	39.2	0.0	0.0	89.0	1.8

Name: year 1995 composite fleet

Fuel Consumption:	31.958 pounds
	5.177 gallons
Carbon Dioxide:	99.710 pounds
Carbon Monoxide:	7.606 pounds
Hydrocarbons:	1.313 pounds
Nitrogen Oxides:	0.367 pounds

Name: year 2000 composite fleet

Fuel Consumption:	31.958 pounds
	5.177 gallons
Carbon Dioxide:	99.710 pounds
Carbon Monoxide:	7.606 pounds
Hydrocarbons:	1.313 pounds
Nitrogen Oxides:	0.367 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Caldwell Avenue/Ben Maddox Way

Cycle (sec):	100	Critical Vol./Cap.(X):	0.556
Loss Time (sec):	12	Average Delay (sec/veh):	20.5
Optimal Cycle:	45	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 1 0 1		
Volume Module:												
Base Vol:	0	0	0	15	0	199	97	320	0	0	493	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	15	0	199	97	320	0	0	493	14
Added Vol:	0	0	0	0	0	4	16	15	0	0	4	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	15	0	203	113	335	0	0	497	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	16	0	221	123	364	0	0	540	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	16	0	221	123	364	0	0	540	15
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	16	0	221	123	364	0	0	540	15
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1805	0	1615	1805	1900	0	0	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.14	0.07	0.19	0.00	0.00	0.28	0.01
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.25	0.00	0.25	0.12	0.63	0.00	0.00	0.51	0.51
Volume/Cap:	0.00	0.00	0.00	0.04	0.00	0.56	0.56	0.30	0.00	0.00	0.56	0.02
Delay/Veh:	0.0	0.0	0.0	28.7	0.0	34.7	44.4	8.4	0.0	0.0	17.4	12.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	28.7	0.0	34.7	44.4	8.4	0.0	0.0	17.4	12.0
LOS by Move:	A	A	A	C	A	C	D	A	A	A	B	B
HCM2kAvgQ:	0	0	0	0	0	7	4	5	0	0	11	0

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 1 0 1		
Lane Group:	xxxx	xxxx	xxxx	L	xxxx	R	L	T	xxxx	xxxx	T	R
#LnsInGrps:	0	0	0	1	0	1	1	1	0	0	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:	8			8			8			8		
% Hev Veh:	0			0			0			0		
Grade:	0%			0%			0%			0%		
Parking/Hr:	No			No			No			No		
Bus Stp/Hr:	0			0			0			0		
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:	0			0			0			0		
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:	0			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	xxxx	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	xxxx	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Hev Veh Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.95
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.00	0.00	0.25	0.00	0.25	0.12	0.63	0.00	0.00	0.51	0.51
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.0	0.0	0.0	0.3	0.0	5.4	3.2	4.6	0.0	0.0	10.2	0.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Q2:	0.0	0.0	0.0	0.0	0.0	1.2	1.1	0.4	0.0	0.0	1.2	0.0
HCM2kQueue:	0.0	0.0	0.0	0.4	0.0	6.5	4.4	5.0	0.0	0.0	11.5	0.2
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.18	1.19	1.19	1.20	1.20	1.18	1.20
HCM2k70thQ:	0.0	0.0	0.0	0.5	0.0	7.7	5.2	6.0	0.0	0.0	13.5	0.3
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.54	1.56	1.55	1.60	1.60	1.50	1.60
HCM2k85thQ:	0.0	0.0	0.0	0.6	0.0	10.1	6.8	7.8	0.0	0.0	17.2	0.4
90th%Factor:	1.80	1.80	1.80	1.79	1.80	1.69	1.72	1.71	1.80	1.80	1.63	1.80
HCM2k90thQ:	0.0	0.0	0.0	0.7	0.0	11.0	7.5	8.6	0.0	0.0	18.6	0.4
95th%Factor:	2.10	2.10	2.10	2.09	2.10	1.92	1.97	1.95	2.10	2.10	1.82	2.09
HCM2k95thQ:	0.0	0.0	0.0	0.8	0.0	12.5	8.6	9.8	0.0	0.0	20.8	0.5
98th%Factor:	2.70	2.70	2.70	2.67	2.70	2.30	2.42	2.38	2.70	2.70	2.11	2.68
HCM2k98thQ:	0.0	0.0	0.0	1.0	0.0	15.1	10.5	11.9	0.0	0.0	24.2	0.6

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	0.0	0.0	0.0	3.1	0.0	48.2	28.9	41.2	0.0	0.0	92.2	1.9

Name: year 1995 composite fleet
Fuel Consumption: 33.682 pounds
5.456 gallons
Carbon Dioxide: 105.086 pounds
Carbon Monoxide: 8.042 pounds
Hydrocarbons: 1.396 pounds
Nitrogen Oxides: 0.386 pounds

Name: year 2000 composite fleet
Fuel Consumption: 33.682 pounds
5.456 gallons
Carbon Dioxide: 105.086 pounds
Carbon Monoxide: 8.042 pounds
Hydrocarbons: 1.396 pounds
Nitrogen Oxides: 0.386 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

```
********************************************************************************
Intersection #3 Caldwell Avenue/Edison Street
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:       0  0  0  0  1    0  0  0  0  0    0  0  0  1  0    0  0  1  0  0
------------||---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0     0    0    0     0  417    0     0  692    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    0     0    0    0     0  417    0     0  692    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0    0     0    0    0     0  417    0     0  692    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
FinalVolume:    0    0    0     0    0    0     0  417    0     0  692    0
------------||---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------||---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   417  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   640  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------||---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *    *     *    *    *     *    *    *     *    *    *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *    *     *    *    *     *    *    *     *    *    *
ApproachDel:    xxxxxx            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         *                 *                 *                 *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```


Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

```
********************************************************************************
Intersection #3 Caldwell Avenue/Edison Street
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
HevVeh:            0%               0%               0%               0%
Grade:             0%               0%               0%               0%
Peds/Hour:         0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                                          #6
Dist(miles):                                                      0.000
Speed (mph):                                                       0.00
SignalIndex:                                                       #2
Cycle Time:                                                           0 secs
InitVolume:                                                    0      0
Saturation:                                                    0      0
ArrivalType:                                                   0      0
G/C:                                                        0.00   0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                                          0.000  0.000
qq1:                                                        0.00   0.00
qq2:                                                        0.00   0.00
qq:                                                         0.00   0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                                             0.000
beta:                                                              0.000
ta (secs):                                                         0.000
F:                                                                 0.000
f:                                                          0.000  0.000
vcmax:                                                         0      0
vcg:                                                           0      0
vcmin:                                                         0      0
tp:                                                         0.0    0.0
p:                                                                 0.000
*** Computation 3: Platoon Event Periods
pdom/psubo:                                  0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:1109  1109   417 1109  1109   692    0 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 1109  1109   417 1109  1109   692    0 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:1109  1109   417 1109  1109   692    0 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:  234   211   640  234   211   447 1636 xxxxx xxxxx 1636 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.: 234   211   640  234   211   447 1636 xxxxx xxxxx 1636 xxxxx xxxxx
```

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Caldwell Avenue/Edison Street

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 1	0	0	0	0 0	0	0	0	1 0	0	0	1	0 0
Volume Module:																
Base Vol:	0	0	0		0	0	0		0	417	0		0	692	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	0		0	417	0		0	692	0	
Added Vol:	0	0	15		0	0	0		0	16	1		0	8	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	15		0	0	0		0	433	1		0	700	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	0	0	15		0	0	0		0	433	1		0	700	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	15		0	0	0		0	433	1		0	700	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	434		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	627		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	627		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.02		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	0.1		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	10.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	B		*	*	*		*	*	*		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	10.9				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #3 Caldwell Avenue/Edison Street

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HevVeh:	0%				0%				0%				0%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:													#6			
Dist(miles):													0.000			
Speed (mph):													0.00			
SignalIndex:													#2			
Cycle Time:																0 secs
InitVolume:													0		0	
Saturation:													0		0	
ArrivalType:													0		0	
G/C:													0.00		0.00	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
p:													0.000		0.000	
gq1:													0.00		0.00	
gq2:													0.00		0.00	
gq:													0.00		0.00	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:															0.000	
beta:															0.000	
ta (secs):															0.000	
P:															0.000	
f:													0.000		0.000	
vcmax:													0		0	
vcg:													0		0	
vcmin:													0		0	
tp:													0.0		0.0	
p:															0.000	
*** Computation 3: Platoon Event Periods																
pdom/psubo:													0.000/0.000/Unconstrained			
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	1134	1134	434		1141	1134	700		0	xxxxx	xxxxx		0	xxxxx	xxxxx	
AdjCnflVol:	1134	1134	434		1141	1134	700		0	xxxxx	xxxxx		0	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000		1.00	1.000	1.000		1.00	x.xxx	x.xxx		1.00	x.xxx	x.xxx	
ConflictVol:	1134	1134	434		1141	1134	700		0	xxxxx	xxxxx		0	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	226	204	627		179	204	443		1636	xxxxx	xxxxx		1636	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000		1.00	1.000	1.000		1.00	x.xxx	x.xxx		1.00	x.xxx	x.xxx	
Potent Cap.:	226	204	627		179	204	443		1636	xxxxx	xxxxx		1636	xxxxx	xxxxx	

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Russell Ave/Burke St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: [0.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1		0 0	0 1	0	0 0	0 0	0	0 0	0 0	0	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
User Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	0	0	0
Critical Gap Module:												
Critical Gp:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FollowUpTim:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capacity Module:												
Cnflict Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Potent Cap.:	0	0	0	0	0	0	0	0	0	0	0	0
Move Cap.:	1	1	1	1	1	1	1	1	1	1	1	1
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Level Of Service Module:												
2Way95thQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:												
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	0	0	0	0	0	0	0	0	0	0	0	0
SharedQueue:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shrd ConDel:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Shared LOS:												
ApproachDel:		0.0			0.0			0.0			0.0	
ApproachLOS:												

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Russell Ave/Burke St

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: A[9.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1		0 0	0 1	0	0 0	0 0	0	0 0	0 0	0	0 1
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	12	0	15	4	0	0	0	0	0	0	47
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	12	0	15	4	0	0	0	0	0	0	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	12	0	15	4	0	0	0	0	0	0	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	12	0	15	4	0	0	0	0	0	0	47
Critical Gap Module:												
Critical Gp:	xxxxx	6.5	xxxxx	7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	4.0	xxxxx	3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	47	xxxxx	6	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	849	xxxxx	1019	900	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	849	xxxxx	1008	900	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	0.01	xxxx	0.01	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	0.0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	9.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	A	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	983	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:		9.3			8.7			xxxxxx			xxxxxx	
ApproachLOS:		A			A			*			*	

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #4 Russell Ave/Burke St

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet
Time Period: 0.25 hour				

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Cameron Ave/Burke St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: [0.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	1	0	0	0 0	0	0	0	0 0	0	0	0	0 1
Volume Module:																
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
User Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Critical Gap Module:																
Critical Gp:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FollowUpTim:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capacity Module:																
Cnflict Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potent Cap.:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Move Cap.:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Volume/Cap:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Level Of Service Module:																
2Way95thQ:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOS by Move:																
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	0	0	0		0	0	0		0	0	0		0	0	0	
SharedQueue:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Shrd ConDel:	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0	
Shared LOS:																
ApproachDel:		0.0				0.0				0.0				0.0		
ApproachLOS:																

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Cameron Ave/Burke St

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: A[8.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	1 0	1	0	0	0 0	0	0	0	0 0	0	0	0	0 1
Volume Module:																
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Vol:	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	12
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	12
Critical Gap Module:																
Critical Gp:	xxxxx	6.5	6.2	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	4.0	3.3	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	12	0	0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	887	1091	1029	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	887	1091	1029	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			8.5			xxxxxx				xxxxxx					
ApproachLOS:	*			A			*				*					

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing AM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #5 Cameron Ave/Burke St

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
HevVeh:	0%				0%				0%				0%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			

Time Period: 0.25 hour

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Scenario Report

Scenario:	PM Phase I
Command:	Default Command
Volume:	PM Peak
Geometry:	Phase I
Impact Fee:	Default Impact Fee
Trip Generation:	PM Peak
Trip Distribution:	Existing plus Phase I
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Trip Generation Report

Forecast for PM Peak

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1		121.00	PM Peak	0.65	0.35	79	42	121	100.0
	Zone 1 Subtotal					79	42	121	100.0
TOTAL						79	42	121	100.0

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Trip Distribution Report

Percent Of Trips Default

	To Gates								
Zone	1	2	3	4	6	7	8	10	11
1	10.0	8.0	22.0	20.0	5.0	5.0	5.0	20.0	5.0

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Turning Movement Report
PM Peak

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Caldwell Avenue/Burke Street													
Base	0	0	0	4	0	26	31	945	0	0	1059	4	2069
Added	21	3	9	0	6	0	0	4	36	33	0	0	112
Total	21	3	9	4	6	26	31	949	36	33	1059	4	2181
#2 Caldwell Avenue/Ben Maddox Way													
Base	0	0	0	12	0	253	258	691	0	0	781	8	2003
Added	0	0	0	0	0	17	9	8	0	0	16	0	50
Total	0	0	0	12	0	270	267	699	0	0	797	8	2053
#3 Caldwell Avenue/Edison Street													
Base	0	0	0	0	0	0	0	949	0	0	1050	0	1999
Added	0	0	9	0	0	0	0	9	4	0	33	0	55
Total	0	0	9	0	0	0	0	958	4	0	1083	0	2054
#4 Russell Ave/Burke St													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	7	0	60	15	0	0	0	0	0	0	27	109
Total	0	7	0	60	15	0	0	0	0	0	0	27	109
#5 Cameron Ave/Burke St													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	15	0	0	0	0	0	0	0	7	22
Total	0	0	0	15	0	0	0	0	0	0	0	7	22
#6 Russell Ave/Ben Maddox Way													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
#7 Cameron Ave/Ben Maddox Way													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
#8													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Caldwell Avenue/Burke Street	E	35.6	0.118	F	613.8	1.375	+578.221 D/V
# 2 Caldwell Avenue/Ben Maddox Way	C	31.4	0.878	C	34.6	0.907	+ 3.264 D/V
# 3 Caldwell Avenue/Edison Street	A	0.0	0.000	C	18.3	0.035	+18.277 D/V
# 4 Russell Ave/Burke St		0.0	0.000	A	9.2	0.059	+ 9.171 D/V
# 5 Cameron Ave/Burke St		0.0	0.000	A	8.6	0.015	+ 8.552 D/V

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Signal Warrant Summary Report

Intersection	Base Met [Del / Vol]	Future Met [Del / Vol]
# 1 Caldwell Avenue/Burke Street	No / No	No / No
# 3 Caldwell Avenue/Edison Street	No / No	No / No
# 4 Russell Ave/Burke St	No / No	No / No
# 5 Cameron Ave/Burke St	No / No	No / No

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #1 Caldwell Avenue/Burke Street

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0	0	0	1!	0	1	0	0	1	1	0	0	1
Initial Vol:	0		0		0		4		0		26		31		945	
ApproachDel:	xxxxxx				35.6				xxxxxx				xxxxxx			

Approach:	West Bound															
Movement:	L	-	T	-												
Control:	Uncontrolled															
Lanes:	0	1	0	0	1	0										
Initial Vol:	0		1059		4											

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=30]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2069]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #1 Caldwell Avenue/Burke Street

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1!	0	0	0	1!	0	1	0	0	1	1	0	0	1
Initial Vol:	0		0		0		4		0		26		31		945	

Approach:	West Bound															
Movement:	L	-	T	-												
Control:	Uncontrolled															
Lanes:	0	1	0	0	1	0										
Initial Vol:	0		1059		4											

Major Street Volume: 2039
Minor Approach Volume: 30
Minor Approach Volume Threshold: 39 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

****
Intersection #1 Caldwell Avenue/Burke Street
****
Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	0	1	0
Initial Vol:	21	3	9	4	6	26	31	949	36	33	1059	4
ApproachDel:	613.8			102.7			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=5.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=33]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2181]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=36]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=2181]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

****
Intersection #1 Caldwell Avenue/Burke Street
****
Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Lanes:	0	0	1! 0	0	0	1! 0	0	1	0	0	1	0
Initial Vol:	21	3	9	4	6	26	31	949	36	33	1059	4

Major Street Volume: 2112
Minor Approach Volume: 36
Minor Approach Volume Threshold: 27 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

****

Intersection #3 Caldwell Avenue/Edison Street

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
Initial Vol:	0		0		0	0		0		0	0		949		0	0		1050		0
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #3 Caldwell Avenue/Edison Street

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
Initial Vol:	0		0		0	0		0		0	0		949		0	0		1050		0

Major Street Volume: 1999
Minor Approach Volume: 0
Minor Approach Volume Threshold: 35 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #3 Caldwell Avenue/Edison Street

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	0	1	0		0	0	1	0	0	
Initial Vol:	0		0		9		0		0		0		0		958		4		0		1083		0	
ApproachDel:			18.3						xxxxxx						xxxxxx						xxxxxx			

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=9]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2054]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #3 Caldwell Avenue/Edison Street

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	0	1		0	0	0	0	0		0	0	0	1	0		0	0	1	0	0	
Initial Vol:	0		0		9		0		0		0		0		958		4		0		1083		0	

Major Street Volume: 2045
Minor Approach Volume: 9
Minor Approach Volume Threshold: 29 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

****

Intersection #4 Russell Ave/Burke St

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
ApproachDel:	0.0				0.0				0.0				0.0			

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #4 Russell Ave/Burke St

****

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	0	0		0	0	0		0	0	0		0	0	0	

Major Street Volume: 0
Minor Approach Volume: 0
Minor Approach Volume Threshold: +Inf

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

****

Intersection #4 Russell Ave/Burke St

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	1	0	0		0	1	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		7		0		60		15		0		0		0		0		0		0		27	
ApproachDel:			9.2						8.9						xxxxxx						xxxxxx			

Approach[northbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=109]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=75]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=109]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

****

Intersection #4 Russell Ave/Burke St

****

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	1	0	0		0	1	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		7		0		60		15		0		0		0		0		0		0		27	

Major Street Volume: 27
Minor Approach Volume: 75
Minor Approach Volume Threshold: 1183

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #5 Cameron Ave/Burke St

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-	R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
ApproachDel:	0.0				0.0				0.0				0.0			

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report (Urban)

Intersection #5 Cameron Ave/Burke St

Base Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	L	-	T	-	L	-	T	-	L	-	T	-	R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Lanes:	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Initial Vol:	0	0	0		0	0	0		0	0	0		0	0	0	

Major Street Volume: 0
Minor Approach Volume: 0
Minor Approach Volume Threshold: +Inf

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Delay Signal Warrant Report

Intersection #5 Cameron Ave/Burke St

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		0		0		15		0		0		0		0		0		0		0		7	
ApproachDel:	xxxxxx						8.6						xxxxxx						xxxxxx					

Approach[southbound][lanes=1][control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=15]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=2][total volume=22]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #5 Cameron Ave/Burke St

Future Volume Alternative: Peak Hour Warrant NOT Met

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Lanes:	0	0	0	1	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	1	
Initial Vol:	0		0		0		15		0		0		0		0		0		0		0		7	

Major Street Volume: 7
Minor Approach Volume: 15
Minor Approach Volume Threshold: 1543

SIGNAL WARRANT DISCLAIMER
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Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

```
********************************************************************************
Intersection #1 Caldwell Avenue/Burke Street
********************************************************************************
Average Delay (sec/veh):      0.7       Worst Case Level Of Service: B[ 35.6]
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:       0  0  1! 0  0    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0    0    0    4    0   26   31  945    0    0 1059    4
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0    0    4    0   26   31  945    0    0 1059    4
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume:     0    0    0    4    0   28   34 1027    0    0 1151    4
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
FinalVolume:    0    0    0    4    0   28   34 1027    0    0 1151    4
------------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:  7.1  6.5  6.2  6.4  6.5  6.2  4.1 xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0  3.3  3.5  4.0  3.3  2.2 xxxx xxxxx xxxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: 2262 2250  1027  2248 2248  1153  1155 xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:   29   41   283    46   41   239   594 xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:     24   39   283    44   39   239   594 xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.00 0.00  0.00  0.10 0.00  0.12  0.06 xxxx  xxxx  xxxx xxxx  xxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.2 xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx  11.4 xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *    *    *    *    *     B    *    *    *    *    *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx    0 xxxxx  xxxx  150 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 35.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *    *    *    E    *     *    *    *    *    *    *
ApproachDel:    xxxxxx             35.6           xxxxxx           xxxxxx
ApproachLOS:         *              E               *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```


Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

```
********************************************************************************
Intersection #1 Caldwell Avenue/Burke Street
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
HevVeh:             3%               3%               5%               5%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                                          #6
Dist(miles):                                                      0.000
Speed (mph):                                                       0.00
SignalIndex:                                                         #2
Cycle Time:                                                          0 secs
InitVolume:                                                    0     0
Saturation:                                                    0     0
ArrivalType:                                                   0     0
G/C:                                                        0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
p:                                                          0.000 0.000
gq1:                                                        0.00  0.00
gq2:                                                        0.00  0.00
gq:                                                         0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                                         0.000
beta:                                                          0.000
ta (secs):                                                     0.000
F:                                                             0.000
f:                                                          0.000 0.000
vcmax:                                                         0     0
vcg:                                                           0     0
vcmin:                                                         0     0
tp:                                                         0.0   0.0
p:                                                             0.000
*** Computation 3: Platoon Event Periods
pdom/psubc:                                    0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:2262  2250  1027 2248  2248  1153 1155 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 2262  2250  1027 2248  2248  1153 1155 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:2262  2250  1027 2248  2248  1153 1155 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:   29    41   283   46    41   239  594 xxxxx xxxxx 1604 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.:  29    41   283   46    41   239  594 xxxxx xxxxx 1604 xxxxx xxxxx
```

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Caldwell Avenue/Burke Street

Average Delay (sec/veh): 11.3 Worst Case Level Of Service: F[613.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	0	0	0		4	0	26		31	945	0		0	1059	4	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		4	0	26		31	945	0		0	1059	4	
Added Vol:	21	3	9		0	6	0		0	4	36		33	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	21	3	9		4	6	26		31	949	36		33	1059	4	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	23	3	10		4	7	28		34	1032	39		36	1151	4	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	23	3	10		4	7	28		34	1032	39		36	1151	4	
Critical Gap Module:																
Critical Gp:	7.1	6.5	6.2		7.1	6.5	6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	4.0	3.3		3.5	4.0	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	2361	2346	1051		2350	2363	1153		1155	xxxx	xxxxx		1071	xxxx	xxxxx	
Potent Cap.:	24	36	274		25	35	239		594	xxxx	xxxxx		640	xxxx	xxxxx	
Move Cap.:	17	32	274		20	31	239		594	xxxx	xxxxx		640	xxxx	xxxxx	
Volume/Cap:	1.38	0.10	0.04		0.21	0.21	0.12		0.06	xxxx	xxxx		0.06	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.2	xxxx	xxxxx		0.2	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		11.4	xxxx	xxxxx		11.0	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		B	*	*		B	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	24	xxxxx		xxxx	72	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	4.5	xxxxx		xxxxx	2.3	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	614	xxxxx		xxxxx	103	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	F	*		*	F	*		*	*	*		*	*	*	
ApproachDel:	613.8				102.7				xxxxxx				xxxxxx			
ApproachLOS:	F				F				*				*			

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

Intersection #1 Caldwell Avenue/Burke Street

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HevVeh:	3%				3%				5%				5%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:													#6			
Dist(miles):													0.000			
Speed (mph):													0.00			
SignalIndex:													#2			
Cycle Time:																0 secs
InitVolume:													0	0		
Saturation:													0	0		
ArrivalType:													0	0		
G/C:													0.00	0.00		
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
P:													0.000	0.000		
gq1:													0.00	0.00		
gq2:													0.00	0.00		
gq:													0.00	0.00		
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:													0.000			
beta:													0.000			
ta (secs):													0.000			
F:													0.000			
f:													0.000	0.000		
vcmax:													0	0		
vcg:													0	0		
vcmin:													0	0		
tp:													0.0	0.0		
p:													0.000			
*** Computation 3: Platoon Event Periods																
pdom/psubc:													0.000/0.000/Unconstrained			
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	2361	2346	1051		2350	2363	1153		1155	xxxxx	xxxxx		1071	xxxxx	xxxxx	
AdjCnflVol:	2361	2346	1051		2350	2363	1153		1155	xxxxx	xxxxx		1071	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000		1.00	1.000	1.000		1.00	x.xxx	x.xxx		1.00	x.xxx	x.xxx	
ConflictVol:	2361	2346	1051		2350	2363	1153		1155	xxxxx	xxxxx		1071	xxxxx	xxxxx	
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	24	36	274		25	35	239		594	xxxxx	xxxxx		640	xxxxx	xxxxx	
UpstreamAdj:	1.00	1.000	1.000		1.00	1.000	1.000		1.00	x.xxx	x.xxx		1.00	x.xxx	x.xxx	
Potent Cap.:	24	36	274		25	35	239		594	xxxxx	xxxxx		640	xxxxx	xxxxx	

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase 1

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Caldwell Avenue/Ben Maddox Way

Cycle (sec):	100	Critical Vol./Cap.(X):	0.878
Loss Time (sec):	12	Average Delay (sec/veh):	31.4
Optimal Cycle:	100	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 1 0 1		
Volume Module:												
Base Vol:	0	0	0	12	0	253	258	691	0	0	781	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	0	253	258	691	0	0	781	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	13	0	275	280	751	0	0	849	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	13	0	275	280	751	0	0	849	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	13	0	275	280	751	0	0	849	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1805	0	1615	1805	1900	0	0	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.17	0.16	0.40	0.00	0.00	0.45	0.01
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.19	0.00	0.19	0.18	0.69	0.00	0.00	0.51	0.51
Volume/Cap:	0.00	0.00	0.00	0.04	0.00	0.88	0.88	0.58	0.00	0.00	0.88	0.01
Delay/Veh:	0.0	0.0	0.0	32.8	0.0	62.5	63.1	8.8	0.0	0.0	31.0	12.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.8	0.0	62.5	63.1	8.8	0.0	0.0	31.0	12.1
LOS by Move:	A	A	A	C	A	E	E	A	A	A	C	B
HCM2kAvgQ:	0	0	0	0	0	11	12	12	0	0	26	0

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 1 0 1		
Lane Group:	xxxx	xxxx	xxxx	L	xxxx	R	L	T	xxxx	xxxx	T	R
#LnsInGrps:	0	0	0	1	0	1	1	1	0	0	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	xxxx	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	xxxx	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Hev Veh Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < No > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.00	0.00	0.19	0.00	0.19	0.18	0.69	0.00	0.00	0.51	0.51
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.0	0.0	0.0	0.3	0.0	7.4	7.6	10.8	0.0	0.0	20.9	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Q2:	0.0	0.0	0.0	0.0	0.0	3.9	4.0	1.3	0.0	0.0	5.3	0.0
HCM2kQueue:	0.0	0.0	0.0	0.3	0.0	11.4	11.6	12.2	0.0	0.0	26.2	0.1
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.18	1.17	1.17	1.20	1.20	1.15	1.20
HCM2k70thQ:	0.0	0.0	0.0	0.4	0.0	13.4	13.6	14.3	0.0	0.0	30.2	0.2
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.51	1.50	1.50	1.60	1.60	1.43	1.60
HCM2k85thQ:	0.0	0.0	0.0	0.5	0.0	17.1	17.4	18.3	0.0	0.0	37.4	0.2
90th%Factor:	1.80	1.80	1.80	1.79	1.80	1.63	1.62	1.62	1.80	1.80	1.51	1.80
HCM2k90thQ:	0.0	0.0	0.0	0.6	0.0	18.5	18.8	19.7	0.0	0.0	39.5	0.2
95th%Factor:	2.10	2.10	2.10	2.09	2.10	1.82	1.82	1.81	2.10	2.10	1.64	2.10
HCM2k95thQ:	0.0	0.0	0.0	0.7	0.0	20.7	21.0	22.0	0.0	0.0	43.0	0.3
98th%Factor:	2.70	2.70	2.70	2.67	2.70	2.12	2.11	2.09	2.70	2.70	1.83	2.69
HCM2k98thQ:	0.0	0.0	0.0	0.9	0.0	24.1	24.4	25.5	0.0	0.0	48.1	0.3

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Fuel Consumption and Emissions
2000 HCM Operations Method
Base Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	0.0	0.0	0.0	2.6	0.0	66.8	68.3	97.5	0.0	0.0	188	1.1

Name: year 1995 composite fleet

Fuel Consumption:	74.365 pounds
	12.047 gallons
Carbon Dioxide:	232.020 pounds
Carbon Monoxide:	18.455 pounds
Hydrocarbons:	3.423 pounds
Nitrogen Oxides:	0.832 pounds

Name: year 2000 composite fleet

Fuel Consumption:	74.365 pounds
	12.047 gallons
Carbon Dioxide:	232.020 pounds
Carbon Monoxide:	18.455 pounds
Hydrocarbons:	3.423 pounds
Nitrogen Oxides:	0.832 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Caldwell Avenue/Ben Maddox Way

Cycle (sec):	100	Critical Vol./Cap.(X):	0.907
Loss Time (sec):	12	Average Delay (sec/veh):	34.6
Optimal Cycle:	113	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Volume Module:												
Base Vol:	0	0	0	12	0	253	258	691	0	0	781	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	0	253	258	691	0	0	781	8
Added Vol:	0	0	0	0	0	17	9	8	0	0	16	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	12	0	270	267	699	0	0	797	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	13	0	293	290	760	0	0	866	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	13	0	293	290	760	0	0	866	9
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	13	0	293	290	760	0	0	866	9
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	1805	0	1615	1805	1900	0	0	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.01	0.00	0.18	0.16	0.40	0.00	0.00	0.46	0.01
Crit Moves:						****	****				****	
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.20	0.18	0.68	0.00	0.00	0.50	0.50
Volume/Cap:	0.00	0.00	0.00	0.04	0.00	0.91	0.91	0.59	0.00	0.00	0.91	0.01
Delay/Veh:	0.0	0.0	0.0	32.3	0.0	66.9	68.4	9.3	0.0	0.0	34.9	12.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.3	0.0	66.9	68.4	9.3	0.0	0.0	34.9	12.4
LOS by Move:	A	A	A	C	A	E	E	A	A	A	C	B
HCM2kAvgQ:	0	0	0	0	0	12	12	13	0	0	28	0

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	0 0	0	0 0	1 0	0	0 1	1 0	1	0 0	0 0	1	0 1
Lane Group:	xxxx	xxxx	xxxx	L	xxxx	R	L	T	xxxx	xxxx	T	R
#LnsInGrps:	0	0	0	1	0	1	1	1	0	0	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	12	12	12	12	12	12	12	12
CrsswalkWid:		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(1t) Adj Case Module:												
f(1t) Case:	xxxx	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	xxxx	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Hev Veh Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	xxxx	1.00
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.00	1.00	1.00	1.00	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < No > > > > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.00	0.00	0.00	0.20	0.00	0.20	0.18	0.68	0.00	0.00	0.50	0.50
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.0	0.0	0.0	0.3	0.0	8.0	7.9	11.3	0.0	0.0	22.0	0.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Q2:	0.0	0.0	0.0	0.0	0.0	4.5	4.4	1.4	0.0	0.0	6.3	0.0
HCM2KQueue:	0.0	0.0	0.0	0.3	0.0	12.4	12.4	12.7	0.0	0.0	28.3	0.1
70th%Factor:	1.20	1.20	1.20	1.20	1.20	1.17	1.17	1.17	1.20	1.20	1.15	1.20
HCM2k70thQ:	0.0	0.0	0.0	0.4	0.0	14.6	14.5	14.9	0.0	0.0	32.5	0.2
85th%Factor:	1.60	1.60	1.60	1.60	1.60	1.50	1.50	1.50	1.60	1.60	1.42	1.60
HCM2k85thQ:	0.0	0.0	0.0	0.5	0.0	18.6	18.5	19.0	0.0	0.0	40.0	0.2
90th%Factor:	1.80	1.80	1.80	1.79	1.80	1.61	1.62	1.61	1.80	1.80	1.50	1.80
HCM2k90thQ:	0.0	0.0	0.0	0.6	0.0	20.1	20.0	20.4	0.0	0.0	42.3	0.2
95th%Factor:	2.10	2.10	2.10	2.09	2.10	1.80	1.80	1.80	2.10	2.10	1.62	2.10
HCM2k95thQ:	0.0	0.0	0.0	0.7	0.0	22.4	22.3	22.8	0.0	0.0	45.9	0.3
98th%Factor:	2.70	2.70	2.70	2.67	2.70	2.08	2.09	2.08	2.70	2.70	1.81	2.69
HCM2k98thQ:	0.0	0.0	0.0	0.9	0.0	25.9	25.8	26.3	0.0	0.0	51.3	0.4

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Fuel Consumption and Emissions
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 Caldwell Avenue/Ben Maddox Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Run Speed:	30 MPH			30 MPH			30 MPH			30 MPH		
NumOfStops:	0.0	0.0	0.0	2.6	0.0	71.7	71.1	101	0.0	0.0	198	1.1

Name: year 1995 composite fleet
Fuel Consumption: 81.366 pounds
13.181 gallons
Carbon Dioxide: 253.863 pounds
Carbon Monoxide: 20.359 pounds
Hydrocarbons: 3.829 pounds
Nitrogen Oxides: 0.903 pounds

Name: year 2000 composite fleet
Fuel Consumption: 81.366 pounds
13.181 gallons
Carbon Dioxide: 253.863 pounds
Carbon Monoxide: 20.359 pounds
Hydrocarbons: 3.829 pounds
Nitrogen Oxides: 0.903 pounds

DISCLAIMER
The fuel consumption and emissions measures should be used with caution and only for comparisons of different signal timings, geometric design alternatives or for general planning applications, as these calculations are applied to the analysis of a single intersection within the CCG and TRAFFIX. Network models are more appropriate since they can account for the influence of the adjacent control measures and other system elements.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Caldwell Avenue/Edison Street

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0 1	0	0	0	0 0	0	0	0	1 0	0	0	1	0 0
Volume Module:																
Base Vol:	0	0	0		0	0	0		0	949	0		0	1050	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	0		0	0	0		0	949	0		0	1050	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	0		0	0	0		0	1032	0		0	1141	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1032	0		0	1141	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	1032		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	285		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	285		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		*	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Note: Queue reported is the number of cars per lane.

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #3 Caldwell Avenue/Edison Street

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
HevVeh:	0%				0%				0%				0%			
Grade:	0%				0%				0%				0%			
Peds/Hour:	0				0				0				0			
Pedestrian Walk Speed: 4.00 feet/sec																
LaneWidth:	12 feet				12 feet				12 feet				12 feet			
Time Period: 0.25 hour																
Upstream Signals:																
Link Index:													#6			
Dist(miles):													0.000			
Speed (mph):													0.00			
SignalIndex:													#2			
Cycle Time:																0 secs
InitVolume:													0		0	
Saturation:													0		0	
ArrivalType:													0		0	
G/C:													0.00		0.00	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																
p:													0.000		0.000	
gq1:													0.00		0.00	
gq2:													0.00		0.00	
gq:													0.00		0.00	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																
alpha:															0.000	
beta:															0.000	
ta (secs):															0.000	
F:															0.000	
f:													0.000		0.000	
vcmax:													0		0	
vcg:													0		0	
vcmin:													0		0	
tp:													0.0		0.0	
p:															0.000	
*** Computation 3: Platoon Event Periods																
pdom/psubc:													0.000/0.000/Unconstrained			
*** Computation 4: Conflicting Flows During Each Unblocked Period																
InitCnflVol:	2173	2173	1032	2173	2173	1141	0	xxxxx	xxxxx	0	xxxxx	xxxxx				
AdjCnflVol:	2173	2173	1032	2173	2173	1141	0	xxxxx	xxxxx	0	xxxxx	xxxxx				
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx				
ConflictVol:	2173	2173	1032	2173	2173	1141	0	xxxxx	xxxxx	0	xxxxx	xxxxx				
*** Computation 5: Capacity for Subject Movement During Unblocked Period																
InitPotCap:	52	47	285	52	47	246	1636	xxxxx	xxxxx	1636	xxxxx	xxxxx				
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx				
Potent Cap.:	52	47	285	52	47	246	1636	xxxxx	xxxxx	1636	xxxxx	xxxxx				

Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
********************************************************************************
Intersection #3 Caldwell Avenue/Edison Street
********************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: C[ 18.3]
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:       0  0  0  0  1    0  0  0  0  0    0  0  0  1  0    0  0  1  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0    0    0     0    0    0     0  949    0     0 1050    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    0     0    0    0     0  949    0     0 1050    0
Added Vol:      0    0    9     0    0    0     0    9    4     0   33    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0    9     0    0    0     0  958    4     0 1083    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92
PHF Volume:     0    0   10     0    0    0     0 1041    4     0 1177    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
FinalVolume:    0    0   10     0    0    0     0 1041    4     0 1177    0
------------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: xxxx xxxx  1043  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   281  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   281  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  18.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *    *     *    *    *     *    *    *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *    *     *    *    *     *    *    *
ApproachDel:       18.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C              *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```


Diamond Oaks TIAR
55-2454-01/CN 1639
Existing PM Peak Hour + Phase I

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Future Volume Alternative

```
********************************************************************************
Intersection #3 Caldwell Avenue/Edison Street
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
HevVeh:             0%               0%               0%               0%
Grade:              0%               0%               0%               0%
Peds/Hour:          0                0                0                0
Pedestrian Walk Speed: 4.00 feet/sec
LaneWidth:       12 feet          12 feet          12 feet          12 feet
Time Period: 0.25 hour
Upstream Signals:
Link Index:                                                          #6
Dist(miles):                                                      0.000
Speed (mph):                                                       0.00
SignalIndex:                                                         #2
Cycle Time:                                                        0 secs
InitVolume:                                                     0     0
Saturation:                                                     0     0
ArrivalType:                                                    0     0
G/C:                                                         0.00  0.00
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection
P:                                                           0.000 0.000
gq1:                                                         0.00  0.00
gq2:                                                         0.00  0.00
gq:                                                          0.00  0.00
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons
alpha:                                                            0.000
beta:                                                             0.000
ta (secs):                                                        0.000
F:                                                                0.000
f:                                                           0.000 0.000
vcmax:                                                          0     0
vcg:                                                            0     0
vcmin:                                                          0     0
tp:                                                          0.0   0.0
p:                                                                0.000
*** Computation 3: Platoon Event Periods
pdom/psubc:                                  0.000/0.000/Unconstrained
*** Computation 4: Conflicting Flows During Each Unblocked Period
InitCnflVol:2221  2221  1043 2226  2223  1177    0 xxxxx xxxxx    0 xxxxx xxxxx
AdjCnflVol: 2221  2221  1043 2226  2223  1177    0 xxxxx xxxxx    0 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.000 1.00 1.000 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
ConflictVol:2221  2221  1043 2226  2223  1177    0 xxxxx xxxxx    0 xxxxx xxxxx
*** Computation 5: Capacity for Subject Movement During Unblocked Period
InitPotCap:   48    44   281   31    44   235 1636 xxxxx xxxxx 1636 xxxxx xxxxx
UpstreamAdj:1.00 1.000 1.00 1.00 1.000 1.00 x.xxx x.xxx 1.00 x.xxx x.xxx
Potent Cap.:  48    44   281   31    44   235 1636 xxxxx xxxxx 1636 xxxxx xxxxx
```