CONTINUING CARE RETIREMENT COMMUNITIES
(PLANNED DEVELOPMENT)

TRAFFIC IMPACT ANALYSIS REPORT

Prepared For:

SCO Planning & Engineering
and
Young Enterprises

Prepared By:

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Roundabouts & Traffic Engineering

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Roundabouts & Traffic Engineering

DECEMBER 23, 2008

CONTINUING CARE RETIREMENT COMMUNITIES

(Planned Development)

TRAFFIC IMPACT ANALYSIS REPORT

Nevada County, California

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December 23, 2008

RTE Project No. 08370

EXECUTIVE SUMMARY

PURPOSE

Roundabouts & Traffic Engineering (RTE) has been retained by SCO Planning & Engineering via Young Enterprises to perform a Traffic Impact Analysis report for the Planned Development - Continuing Care Retirement Communities (CCRC) project in Nevada County, California. The project consists of approximately 335 units in a campus environment designed to house a population ranging from 350 to 450 seniors housed in a variety of accommodation choices and assistance levels such as cottages, group homes, and assisted living apartments. The campus will also have other buildings associated with the project such as activity areas, recreational amenitites, village services, and medical support buildings. The project is located east of SR 49, north of Auburn, and consists of four parcels with the primary access on Rincon Way, east of State Route 49 in Nevada County, California.

This report analyzes the traffic impacts generated by the development upon completion, which is assumed to be in the current year of 2008 for analysis purposes. SCO Planning and Engineering provided the scope of the traffic study and traffic policy thresholds related to this report.

CONCLUSIONS & RECOMMENDATIONS

The findings of the Traffic Impact Analysis are listed below:

1. SR 49/Rincon Way operates at an overall LOS A with or without the project (existing and future); however, the westbound approach falls from a current LOS E to a LOS F with the project. According the capacity analyses, the westbound left functions at a LOS F with or without the project in the future.
2. Signal warrants are **not** met under existing or future conditions with or without the project at the study area intersection of SR 49 / Rincon Way.
3. A mutually exclusive westbound left and westbound right turn lane on Rincon Way is recommended to be striped for the approach.
4. The internal roadways were not reviewed due to the stage of the site plan.
5. Intersection sight distance could not be measured in the field at this time. Nevada County should verify this site distance with the final plans.
6. A secondary emergency access is proposed for the project.
7. The project is expected to generate 941 average daily trips, 99 of which occur during the PM peak hour (48 entering and 51 exiting). Traffic generated by this development will **not** have a significant impact on the adjacent roadways.

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Chapter 1 INTRODUCTION

Roundabouts & Traffic Engineering (RTE) has been retained by SCO Planning & Engineering via Young Enterprises to perform a Traffic Impact Analysis report for the Planned Development - Continuing Care Retirement Communities (CCRC) project in Nevada County, California. The project consists of approximately 335 units in a campus environment designed to house a population ranging from 350 to 450 seniors housed in a variety of accommodation choices and assistance levels such as cottages, group homes, and assisted living apartments. The campus will also have other buildings associated with the project such as activity areas, recreational amenitites, village services, and medical support buildings. The project is located east of SR 49, north of Auburn, and consists of four parcels with the primary access on Rincon Way, east of State Route 49 in Nevada County, California.

The purpose of this engineering study is to determine the impacts of the traffic generated by the proposed development on the surrounding roadway infrastructure. This study will determine if mitigation is required to keep the roadways operating safely and at capacity levels acceptable under current Nedava County code. The report is based on local ordinances, and provides a complete traffic engineering analysis of the intersection identified for analysis.

This analysis is conducted in conformance with direction provided by SCO Planning & Engineering via the Nevada County Department of Transportation. The with and without project traffic conditions are analyzed and discussed in detail in the subsequent sections. This engineering report examines the full build out of the site-generated traffic volumes, as well as the operational analysis of the study intersection located within the study area. The report documents the findings and conclusions of a Traffic Impact Analysis conducted for a proposed site plan for property located in Nevada County, California.

SCOPE OF STUDY

This traffic engineering study documents the existing and proposed conditions, traffic data, capacity, and safety analysis in accordance with Nevada County requirements. SCO Planning & Engineering staff has provided the scope and limits of the intersections to be analyzed as well as the methodology identified in this report via discussions with Caltrans. Only the PM peak hour conditions at the intersection of SR 49 / Rincon Way was requested to be included in the traffic analyses. However, both existing (2009) and future (2029) PM peak hour level of service analyses have been conducted for this study. This intersection was analyzed in the trip generation, distribution, and assignment of this report. This

Traffic Impact Analysis report is prepared for submission to the County. In addition, the traffic study analyzes the Level of Service (LOS) with a 2 second threshold. Although future conditions may not be warranted for the study intersection, future year analyses were prudent to analyze signal warrants.

Initially, this document presents existing traffic conditions and level of service analyses in the area under existing PM peak-hour conditions without the project in order to identify the critical study intersections, or the study intersections that are currently operating at a LOS D or worse during the PM peak hour. Next, the proposed development is assessed to determine the traffic that will be generated in peak-hour vehicle trips and daily vehicle trips. These additional vehicle-trips are then assigned to the nearby roadway system to determine the necessary level of analysis, and to identify the impact on intersection LOS, as well as to determine the level of significance of the impacts for the existing PM peak hour conditions. No AM peak hour analyses were required per SCO via the Nevada County Department of Transportation and Sanitation. The impact on intersection LOS under future conditions are then analyzed to determine the level of significance of the impacts for the future PM peak hour conditions. Finally, conclusions and recommendations are made at the study area intersection.

Traffic related issues addressed in this report are consistent with County requirements. The issues are:

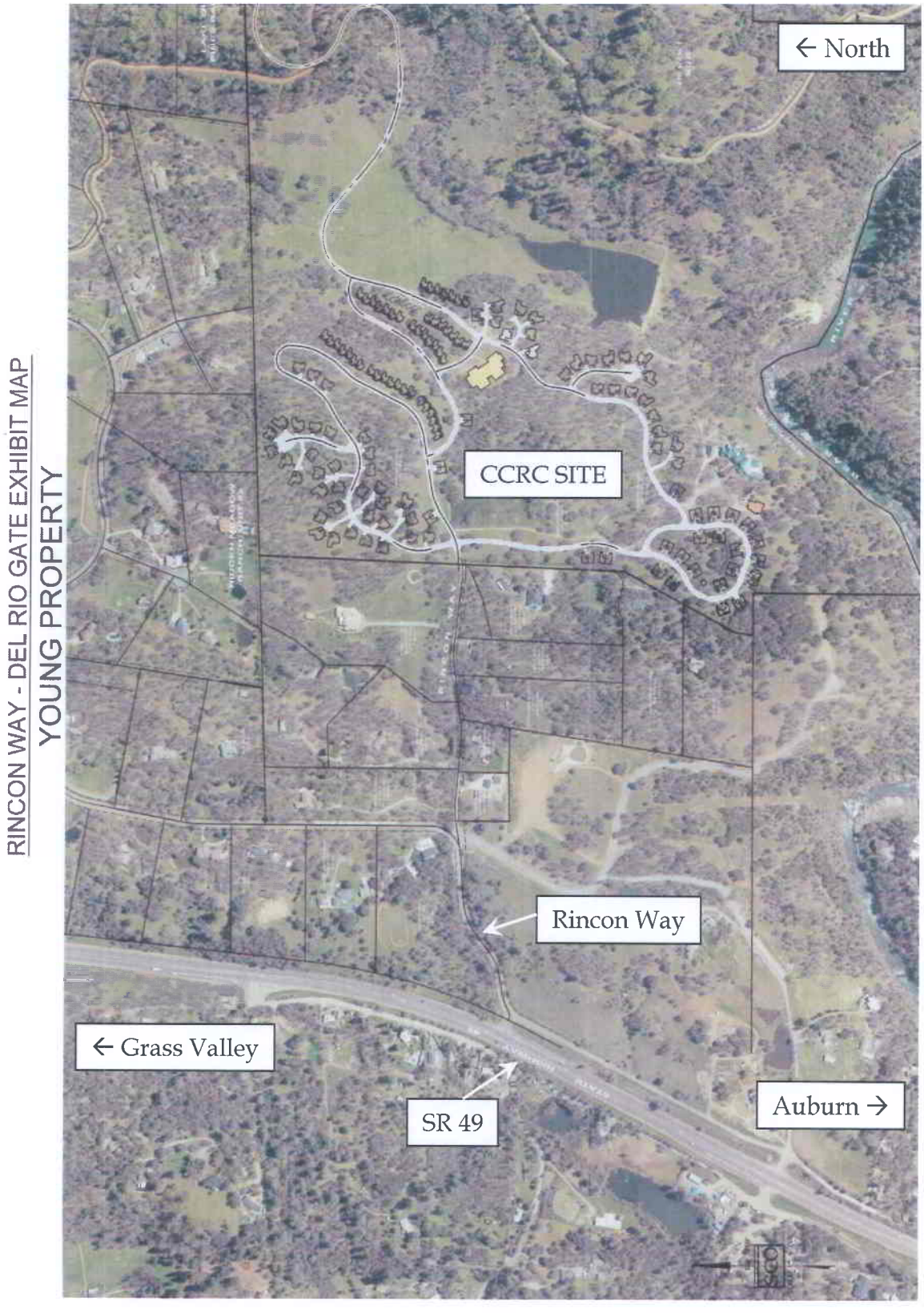
- Existing PM peak hour traffic conditions at the specific intersection
- Site generated traffic volumes, their distribution, and assignment to the identified study area intersection
- Capacity analysis of the required intersection during the existing PM peak hour conditions
- Capacity analysis of the required intersection during the existing PM peak hour conditions
- Safety analysis of the proposed conditions
- Recommendations for mitigation of traffic impacts and conclusions

The results of this traffic study are used to develop recommendations to mitigate project traffic impacts. This analysis considers the following traffic scenarios:

1. Existing PM peak hour conditions ***without project traffic***
2. Existing PM peak hour conditions ***with project traffic***
3. Future PM peak hour conditions ***without project traffic***
4. Future PM peak hour conditions ***with project traffic***

The identified study area within Nevada County is shown in Figure 1.

Figure 1: Project Vicinity Map



Chapter 2 EXISTING CONDITIONS

The existing infrastructure and operational traffic conditions in the vicinity of the site were documented. The purpose of this section is to provide a foundation of comparison to project conditions. Roadway conditions were studied to identify if the roadways are currently operating in a safe and efficient manner. The following discussion presents information regarding the project site, turning movement traffic volumes, and traffic conditions in the study area. The study area and the impacted intersections were defined based on information provided by SCO Staff prior to starting the impact analysis.

ROADWAY CHARACTERSTICS

Data was gathered on the roadways impacted by the project for the purpose of analyzing the capacity of the existing roadway system. The pertinent information regarding these roadways are described below.

State Route 49 (SR 49)

State Route (SR) 49 provides the primary connection between Grass Valley and Auburn. From Interstate 80 (I-80) in Auburn, SR 49 continues northward and combines with SR 20 to the west of Grass Valley. East of Grass Valley, SR 49 continues northward into Sierra County SR 20 continues eastward to its intersection with I-80. Within the project vicinity, this roadway is a high volume four lane undivided highway with turn lanes.

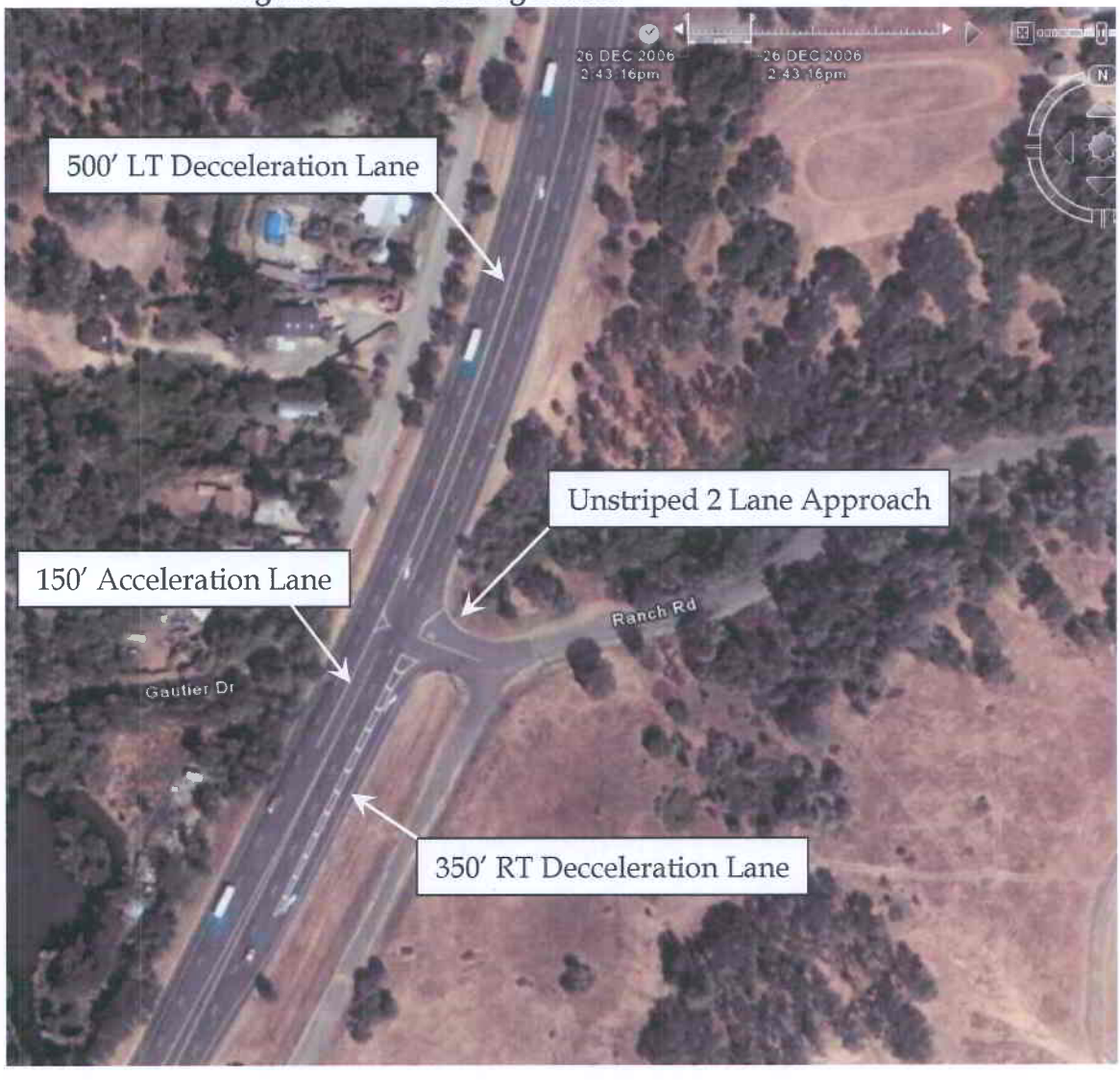
Rincon Way

Rincon Way is a rural two-lane local roadway running eastward from SR 49. It provides access to a small area directly east of the intersection of SR 49 / Rincon Way then indirectly connects to Willow Valley Road and Nevada Street. This is a low volume roadway with an assumed posted speed limit of 25 miles per hour.

INTERSECTION CHARACTERISTICS

The project area is defined as the vicinity of the site encompassed by the study area intersection and the site itself. Figure 2 displays the existing intersection lane configuration and traffic control.

Figure 2: Lane Configuration and Traffic Control



SR 49 / Rincon Way

The intersection of SR 49/Rincon Way is a three legged or "T" intersection with the primary movements along SR 49 (uncontrolled). Currently, a 325′ northbound channelized deceleration right turn lane exists as well as a long 500′ southbound deceleration left turn lane along SR 49 for Rincon Way. A 150′ acceleration lane is also present on SR 49 for westbound left turns from Rincon Way onto SR 49. In addition, a very wide roadway has been constructed on Rincon Way (stop controlled) near the intersection with SR 49 to include an unstriped left turn lane (roughly 12 feet) as well as an additional varying width (12-22 feet) for a right turn lane for at least two lanes on the approach.

EXISTING TRAFFIC VOLUMES

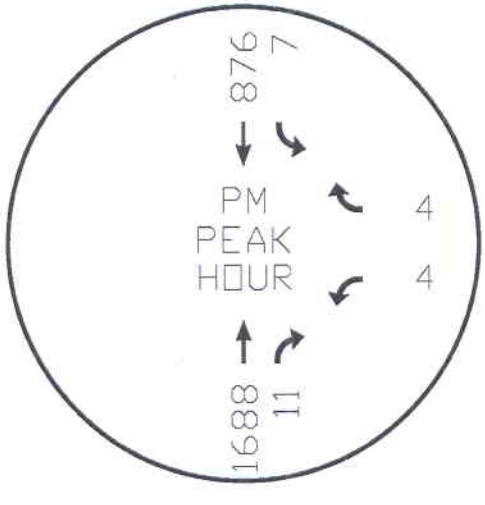
Existing traffic volume data is the basis for the analysis of the capacity and safety of the roadway. Traffic volume data was gathered for the study intersection from field traffic counts conducted by SCO to determine the existing traffic turning movement volumes. A new traffic model was assembled for this project to reflect the new traffic conditions of the area in 2008/9. The new count data was input into the existing conditions traffic model for this analysis to obtain current conditions at the identified intersection.

As required, the PM peak-hour traffic volumes have been analyzed at this intersection for the existing (2009) conditions with and without project. Existing PM peak-hour turning movement volumes, as presented in Figure 3, have been compiled for the study intersection. The source and basis foundation for these volumes are discussed in this section of the report.

Study Area Intersection

Since no existing traffic volumes at the SR 49/Rincon Way intersection were currently available from past traffic studies, the 2009 PM peak-hour traffic volumes taken during the month of December (12/4/2008) during the PM peak hours of 4:00-6:00 PM on a Thursday for this project. All turning movement volumes for this project are based on actual turning movement counts conducted in 2008 during the PM peak hours of 4:00-6:00 PM on typical weekdays. AM turning movement volumes were not required.

Figure 3: Existing PM Peak Hour Volumes



Chapter 3 PROPOSED CONDITIONS

The proposed development will add traffic to the roadway system. The project location, the size of the project, and when it will be completed are all important elements that need to be considered to determine the impacts of this development on safety and capacity. It is also important to examine how the project will operate with the existing transportation system, estimate how much new traffic it will generate, and predict where traffic generated by the site will be distributed. This section will also address any funded infrastructure changes planned by other agencies or developers. All of the above elements are important in assessing the traffic impacts of this project.

PROJECT DESCRIPTION

The project consists of approximately 335 units on 215 acres with a campus environment designed for a population ranging from 350 to 450 seniors. The property consists of four parcels located east of SR 49, north of Auburn, with the primary access on Rincon Way, east of State Route 49 in Nevada County, California. The Owner is seeking a new zoning district, Planned Development – Continuing Care Retirement Communities (PD-CCRC). Continuing Care Retirement Communities offer services and housing in an aged restricted campus setting which includes independent living, assisted living, nursing facilities, physical rehabilitation, and memory impairment housing.

The campus will also have other buildings associated with the project such as activity areas, recreational amenitites, village services, and medical support buildings. Some of the ativity and recreational amenities include a clubhouse, driving range, clay/art studio, aquatic center, gym/workout, yoga/dance, fishing pond, gardening facility, walking trails, picnic areas, and others. Some of the village services include a hair solon, deli/sports bar, libraries, computer/business center, post office, bank, and others. Some of the medical support buildings include doctors, dentists, rehabilitation facilities, and other professional services.

CCRC's are designed as aging in place communities recognizing and accepting aging as a dynamic process wherein seniors can change their assistance levels without moving out of the facility area. Hence, a variety of accommodation choices and assistance levels such as cottages, group homes, and assisted living apartments are available with a self contained CCRC environment. The project consists of the following:

- 75 Active Living Detached Cottages

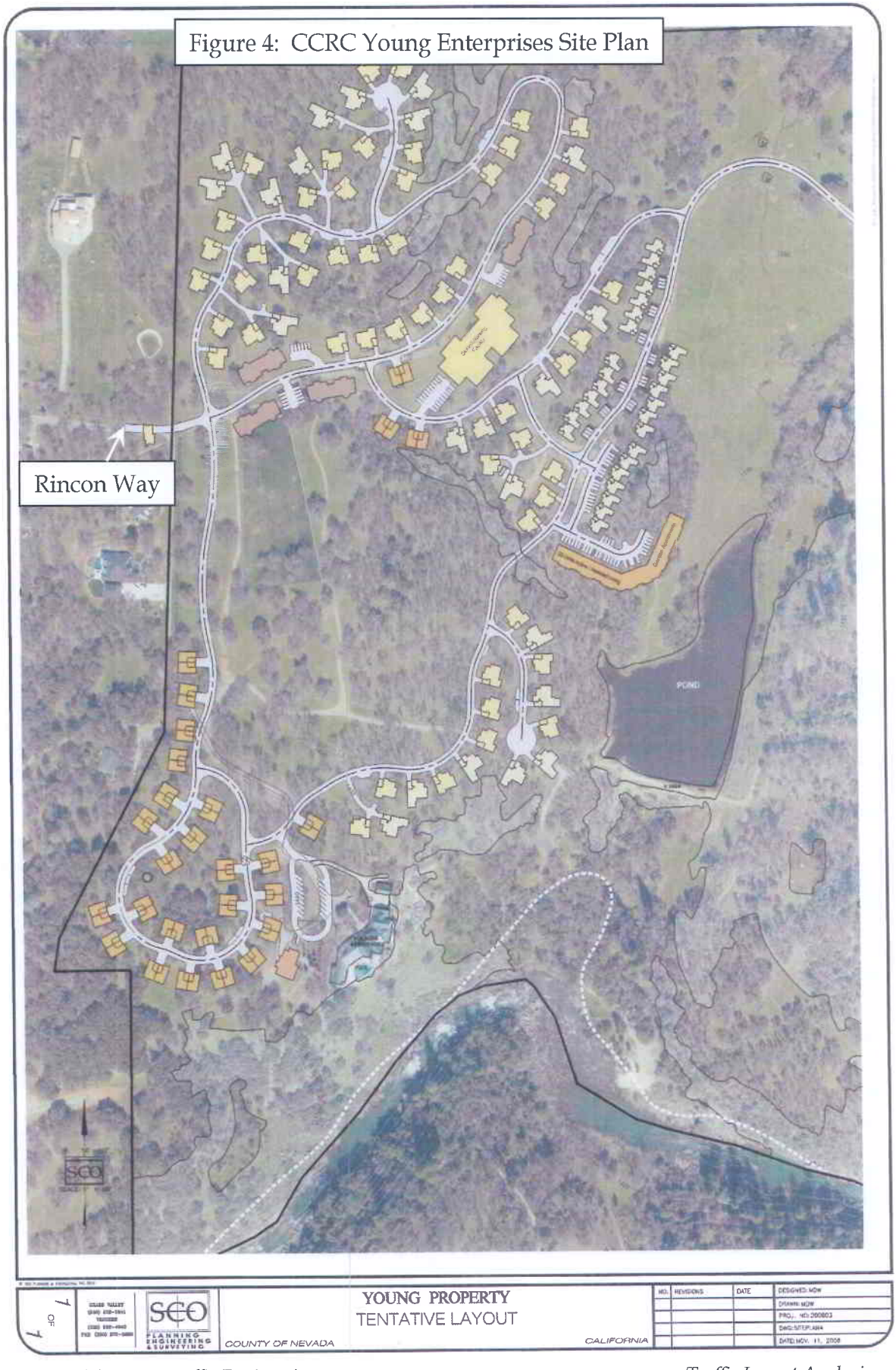
- 3 Active Living Detached Group Homes
- 55 Active Living / Assisted Living Duplexes
- 50 Active Living / Assisted Living Apartments
- 150 Assisted Living Apartments (2 Buildings)
- 1 Skilled Nursing Facility (35 Rooms)
- 1 Memory Impairment Group Home
- Other Stand Alone Support Buildings (desribed above)

For analysis and calculation simplicity and to remain conservative is is assumed that all project generated trips access onto Rincon Way via SR 49 in the traffic model. This report analyzes the traffic impacts generated by the development upon completion, which is assumed to be in the current year for analysis purposes. The preliminary proposed site plan (tentative only) provided to Roundabouts & Traffic Engineering (RTE) is shown below in Figure 4.

Access

Properly located access points are essential to allow for the safe and orderly movement of traffic in and out of a site. Nevada County recognizes this fact and has enacted ordinances and policies to assure their proper placement and construction. The proposed primary access would be onto Rincon Way via the extension of Rincon Way. It should be noted that no sight distance verification or calculations could be performed for the new roadways or site accesses on Rincon Way. SCO and Nevada County should verify that the final site plan improvements are compliant with their standards since RTE was unable to review the final plans. There were no current sight distance issues observed with the existing intersection at SR 49 / Rincon Way. In addition, according to SCO, a secondary access is proposed to the site for emergency service vehicles. No further information is currently available regarding access to the site.

Figure 4: CCRC Young Enterprises Site Plan



TRIP GENERATION AND DISTRIBUTION

Trip Generation

Trip generation estimates were prepared for the proposed development using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 7th Edition*. These estimates are based on observed traffic-generation rates for similar land uses nationwide. An estimate of the number of trips generated by the proposed project was developed in order to analyze the existing traffic generation impacts. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Specifically, the PM peak hour project generated trips on an average weekday need to be determined in order to apply the resulting trips to current County policy requirements.

A trip generation analysis was conducted during the PM peak hour of a typical weekday for the land use identified. Based upon the information provided by the applicant and the proposed site plans, the "Continuing Care Retirement Community (CCRC)" land use (ITE Land Use Code 255) best fits this site for the proposed use. The CCRC land use is defined by ITE as follows:

> *"CCRCs are land uses that provide multiple elements of senior adult living. CCRCs combine aspects of independent living with increased care, as lifestyle needs change with time. Housing options may include various combinations of senior adult detached, senior adult attached, congregate care, assisted living and skilled nursing care – aimed at allowing the resident to live in one community as their medical, dining, recreational and some limited, suprroting retail facilities. CCRCs are usually self contained villages."*

Furthermore, the Institute of Transportation Engineers *Trip Generation Manual, 7th Edition* cautions users when applying the provided data since continuing care retirement communities are relatively new and unique land uses. The ITE Manual further states:

> *"These developments consist of various housing components (dweling units, rooms and beds) that often exist in varying proportions. Therefore, the use of a single housing component does not fully dscribe the trip generation characteristics of these communities. Based upon a review of the limited data submitted for this land use, it was determined that a comprehensive independent variable, occupied units, was the most appropriate descriptor of the characteristics. This variable is defined as an aggregate of all living accommodations common to these communities."*

Therefore, in order for these analyses to remain extremely conservative, RTE assumed the total number of units equaled the total number of occupied units.

Based on the above information within the *ITE Trip Generation Manual*, the land use descriptions and data points specified for this land use are directly consistent with and applicable to this project. In addition, the *ITE Trip Generation Manual* has only one independent variable for the land use (occupied units). Therefore, the land use's accuracy of the independent variable and data provided in the ITE Manual is predetermined at "occupied units" for this project's analyses during the peak hours between 4:00 and 6:00 PM.

However, the ITE manual provides both a weighted average rate and a fitted curve equation for the independent variable for the land use. The equation produces logical trip end estimates for the proposed land use, based on the size of the facility, and the site falls within the data point range of other like facilities analyzed nationwide. Therefore, the fitted curve equation method was used for this project in accordance with ITE's "Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations" (*Trip Generation Handbook*, ITE 2004). In addition, the provided average rate produced nearly the same results as the fitted curve equation at 2 PM peak hour trips less than the equation. However, no equation was available for the calculation of the average daily trips (weekday). Therefore, only the weighted average daily rate could be used for these analyses.

Since the status of the one existing dwelling unit on the property was unknown (occupied and remaining, occupied and removed, or currently unoccupied), the one PM peak hour trip and approximately 10 daily trips were not accounted for or calculated in the analyses. In addition, RTE is informed the site plan has not yet been finalized and may be adjusted based on SCO's engineering and design of the site. Therefore, the quantity of 335 units was used in these analyses as the number of occupied units although the actual number of units may change in final design. If a significantly different density is proposed with final design, these analyses may need to be recalculated.

Table 1 summarizes the average daily vehicle-trips as well as the PM peak-hour trips on a typical weekday peak hour of adjacent street traffic for one hour between 4:00 and 6:00 PM based on the fitted curve equation. As shown in Table 1, the project would generate an estimated total of 99 PM peak-hour trips (48 entering, 51 exiting) and 941 average daily trips occurring during normal business operation hours of adjacent street traffic. No additional Transportation Impact Factors, such as transit trip reductions, were applied in this analysis.

TABLE 1: TRIP GENERATION - CCRC YOUNG

Description	Land Use	Quantity	Unit	ITE Land Use Code	Weekday Trip Rates[1] PM Peak-Hour Trip In	Out	Total	Daily	Weekday Trips PM Peak-Hour Trip In	Out	Total[2]	Daily
Continuing Care Retirement Community	Continuing Care Retirement Community	335	# of Units / Occupied	255	*Fitted Curve Equation: T=0.18(x)+39.13*			2.81	48	51	**99**	**941**
Transportation Impact Factors (Trip Reductions)									*0*	*0*	*0*	*0*
				TOTAL PROJECT TRIP GENERATION					48	51	**99**	**941**

Note 1: Trip rates are based on ITE's Trip Generation Manual, 7th Edition (Institute of Transportation Engineers)

Note 2: Trips are rounded to the nearest integer.

Source: RTE

CCRC Young Tables.xls

Trip Distribution and Assignment

The distribution of traffic arriving and leaving the project site is identified based upon existing traffic patterns, regional roadways and destinations, the location of commercial and other residential areas within the local and regional area, and the relative convenience of travel via the various existing and potential routes. In particular, the this project's location has only two routes to ingress or egress the site area via SR 49, which is to the north or south. The distribution analyses identified a relatively even split to the north and south of Rincon Way, which makes sense since the site is nearly equadistant between Grass Valley and Auburn's commercial centers, employment centers, and educational facilities within the regional area. The peak-hour traffic distribution may be found in Table 2 below.

Table 2: CCRC Young Trip Distribution & Assignment

Model Gate #	Location / Area	% Project Distribution	PM Trip Assignment
1	SR 49 to the North (via Rincon Way)	50%	49.5
2	SR 49 to the South (via Rincon Way)	50%	49.5
3	Hidden Ranch Road (Surrounding Project Area)	0%	0
	TOTAL	*100%*	*99*

Note: Numbers have been rounded to the nearest integer

Source: RTE CCRC Young Tables.xls

The project generated traffic turning movement volumes are calculated by applying the directional distribution in Table 2 above to the project generated traffic in Table 1 and applying these volumes to the study area intersections. The assigned existing project-generated turning movement volumes at the study area intersection for the PM peak-hour are 100% at SR 49 / Rincon Way and are shown graphically in Figure 5. In addition, 2009 with project turning movement volumes are shown in Figure 6. This data is also shown in the attached traffic calculations and Traffix modeling output in the Appendices.

Figure 5: Project Generated Traffic Volumes

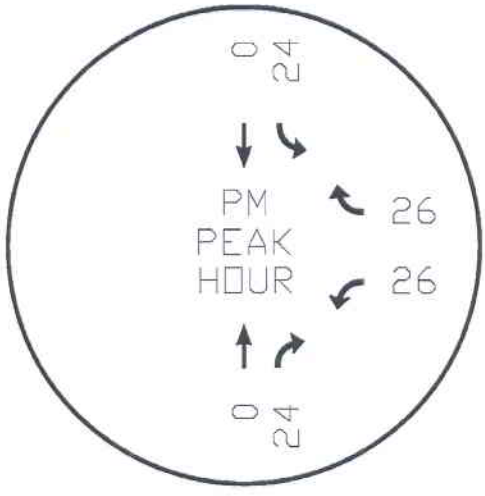
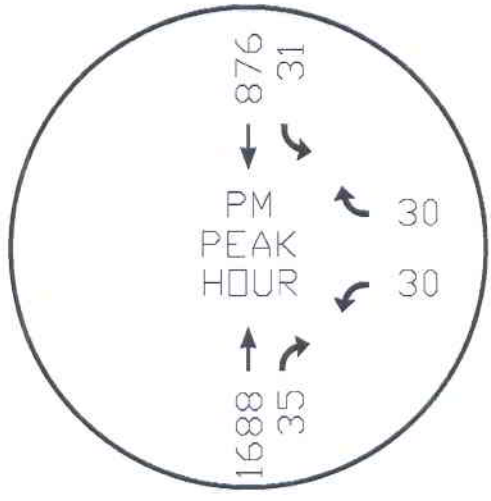


Figure 6: Existing With Project Volumes



PROPOSED INFRASTRUCTURE

Roadways and Intersections

None of the study area intersections or roadways have future planned development or improvements currently identified to be completed by Caltrans, the County, or other developers. The proposed tentative map application includes internal roadway improvements for this project as well as an extension to Rincon Way. Cross sections, right-of-way limits, and specific details of the proposed infrastructure are not available at the time of this study for further comment or review. However, RTE is informed the site will have a secondary emergency access.

FUTURE TRAFFIC VOLUMES

Future AM and PM peak-hour turning movement volumes without the project have been estimated for the study intersection as discussed below. The source and basis foundation for these volumes are discussed in this section of the report.

Future traffic volume data is the basis for the analysis of the capacity and safety of the future roadways and intersections. Based on the traffic volume data that was gathered for the major intersection in the site vicinity under the Existing Traffic Volumes section of the pervious chapter, Roundabouts & Traffic Engineering (RTE) increased the existing traffic volumes at an annual average growth rate of 1.9 percent, which is the estimated population growth rate

identified in the *City of Grass Valley 2020 General Plan* (City of Grass Valley, 1999), for a period of five (5) years to the design year 2014. Please note other local jurisdictional requirements do not require future year analyses for non-critical intersections. However, RTE found it prudent to analyze this intersection under multiple future volume scenarios to determine if signal warrants would be met past the standard five years at 15 years and 20 years (2024 and 2029).

New count data was required to be input into the future conditions traffic model for this analysis to obtain current future conditions. The current count data, as described above, was increased linearly by an average of 1.9% per year to obtain future conditions. No further adjustments or additions to these volumes were accounted for in the estimated future traffic volumes at the study intersection since no other submitted or currently approved but not-yet-built projects within the area could be identified. According to the past four years of posted Caltrans count data at Cottage Drive (MP 5.99), traffic volumes have remained relatively constant on SR 49 from 2004 to 2007. Hence, a 1.9% increase is conservative to use in the future assumptions.

The future turning movement volumes at the study area intersection for the applicable PM peak-hour are shown in Figure 7. Following these traffic volumes are the future 2014 plus project traffic volumes. The 2014 with project turning movement volumes are shown in Figure 8. This data is also shown in the attached traffic calculations and Traffix modeling output in the Appendices.

Figure 8: Future Without Project Volumes

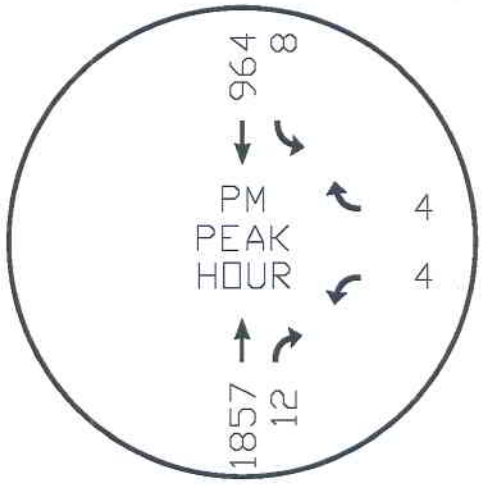
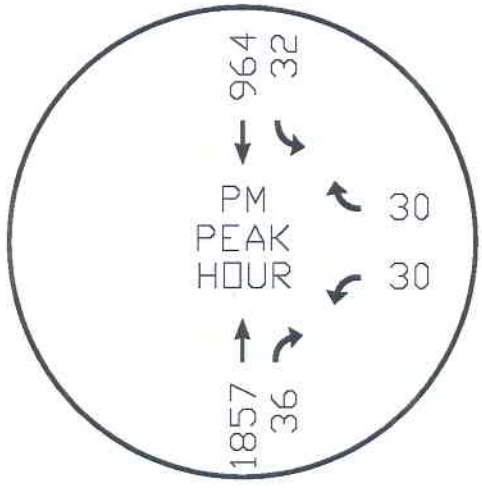


Figure 7: Future With Project Volumes



Chapter 4 CAPACITY ANALYSIS

DESCRIPTION

Traffic operations are assessed in terms of Level of Service (LOS). LOS is a concept that was developed by transportation engineers to quantify the level of operation of intersections and roadways, as presented in the *Highway Capacity Manual* (Transportation Research Board, 2000). The LOS for most jurisdictions at intersections is classified in grades "A" through "F." These grades of LOS are quantified in terms of average delay per vehicle. A LOS "A" reflects full freedom of operation for a driver, while a LOS "F" represents very long delays of operation for a driver, forcing the driver to wait for adequate gaps in conflicting traffic. The criteria is based on the theory of gap acceptance for side-street stop-sign-controlled approaches. A detailed description of LOS criteria is provided in the Appendices.

Generally, LOS "E" is considered the thresholds of acceptable operation for unsignalized intersections. Caltrans strives for to maintain a LOS "D" or better on all state facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency (Nevada County) consult with Caltrans to determine the appropriate target LOS for a project. Therefore, Nevada County staff and Caltrans may determine different acceptable thresholds for this area or specific intersection on SR 49. The Highway Capacity Manual methodology was used for this unsignalized study area intersection.

ANALYSIS METHODOLOGY

Traffic impacts were estimated to determine the extent of change in traffic conditions caused by the development of this project. In order to make this determination, the following assumptions were employed:

- *The proposed development will be built-out and in full operation in 2009.*
- *Existing background traffic on the study area's major roadways was analyzed based on existing count data.*
- *Traffic generation estimates for the project have been prepared for the year of 2009 (as required). These estimates were prepared for the PM peak hours of the surrounding roadway system.*
- *Geometric design changes at the major intersections, and background traffic volumes on the surrounding street system have been determined*

prior to adding the traffic impacts of the proposed project. This was done to establish a baseline for measurement of the incremental impact of the project at the time of its development.

- *Future traffic impacts at a growth rate of 1.9% per year were added to the existing volumes and were also analyzed for this project to determine signal warrants.*

- *If required, roadway improvements have been addressed at appropriate intersections to maintain acceptable levels of operation and threshold criteria. This procedure was conducted for non-project and project-related impacts.*

Per the study requirements, the unsignalized intersection was analyzed using the Highway Capacity Manual (HCM) 2000 methodologies with the HCM 2002 update. The intersections were evaluated using the Traffix software package, which is based upon HCM methodologies. LOS calculations and traffic models for the study area intersection for the previously defined peak hours have been completed and evaluated (calculations can be found in the attached Appendices).

The standard traffic study methodology for this area identifies a threshold of significance for **critical unsignalized** intersections as follow: *"Projects that do not increase the average intersection delay by more than 2.0 seconds for unsignalized intersections will be determined to have a less than significant effect on that intersection."* A critical intersection is defined as one that operates at a LOS D, E, or F. Currently, the study area intersection has not been identified as operating at a critical status.

However, modeling the SR 49 / Rincon Way intersection is difficult for the standard software methodologies since a southbound acceleration lane is present. Since the acceleration lane on SR 49 is not an available option in the modeling software, RTE has provided two sets of capacity analyses to show the impacts and methods used to simulate the acceleration lane per scenario. Essentially, the acceleration lane allows westbound left turns from Rincon Way to enter onto southbound SR 49 without conflict of other southbound traffic already on SR 49. Hence, RTE performed several models runs with and without the SR 49 southbound traffic included to simulate the effects of the acceleration lane. Both of these analyses under all conditions can be found in the Appendices of this report.

In addition, although Caltrans and the County may not require future year analyses, RTE found it prudent to analyze future conditions of this project's study area intersection to determine if signal warrants would be met. Several

future year scenarios were considered in the analyses including 5 years out (2014), 15 years out (2024), and 20 years out (2029) to determine if a signal would be needed at the intersection of SR 49/Rincon Way at some point in the future. The existing traffic volumes were increased at an annual average growth rate of 1.9 percent linearly for a period of fifteen as well as twenty years despite the past four years of Caltrans data showing significantly less growth.

EXISTING LOS ANALYSIS

This traffic section of the engineering study analyzes the study area intersection under existing conditions with and without the site-generated vehicular trips. The study area intersection was evaluated to determine existing operational conditions for the PM peak-hour. Using the traffic count data presented in the Existing Conditions Volumes in Chapter 2 of this study, it is possible to evaluate the level of service (LOS) provided during peak periods on the study intersection serving the area. The analysis methodology used is described above for unsignalized intersection to conduct this analysis. Table 4 below summarizes the results of the LOS analyses for the existing with and without project conditions. As shown in Table 4, the existing with project level of service and the thresholds are not exceeded at the study area intersection.

TABLE 4: Project Impact on Existing Conditions

INTX #	Intersection Description	2009 P.M. Peak Worst Leg Delay	2009 P.M. Peak Worst Leg LOS	2009 P.M. Peak Total Intersection Delay	2009 P.M. Peak Total Intersection LOS	2 Second Threshold Exceeded?
1	SR 49 / Rincon Way					
	No Project	35.1	E[1]	0.2	A	
	Plus Project	55.5	F	2.1	A	
	Change in Delay (seconds)	*(WB Shared Approach)*		1.9		No

Note: LOS D is > 20 and < 35.1 seconds, wherein LOS E is >35.0 and < 55 seconds. Hence, the result is very close to LOS D.

Source: RTE CCRC Young Tables.xls

FUTURE LOS ANALYSIS

Since the results of the existing conditions show the intersection functioning well as a whole but poorly for the westbound approach as well as the fact turning lanes already exist at the study area intersection, RTE found it prudent to analyze this intersection under multiple future volume scenarios to determine if signal warrants would be met in 15 years and 20 years into the future. Hence, future year 2014 LOS analyses were conducted as shown below in Table 5.

TABLE 5: Project Impact on Future Conditions (5 Years / 2014)

INTX #	Intersection Description	2014 P.M. Peak Worst Leg Delay	2014 P.M. Peak Worst Leg LOS	2014 P.M. Peak Total Intersection Delay	2014 P.M. Peak Total Intersection LOS	2 Second Threshold Exceeded?
1	SR 49 / Rincon Way					
	No Project	44.2	E	0.3	A	
	Plus Project	83.0	F	2.8	A	
	Change in Delay (seconds)	*(WB Shared Approach)*		2.5		Yes

Source: RTE — CCRC Young Tables.xls

As shown in Table 5, the overall intersection still functions at LOS A with the project in 2014, but Rincon Way (westbound approach) experiences a worst case scenario of LOS F during the PM peak hour with the project (down from the existing LOS E without project). Specifically, the westbound left turn is reported as the problematic leg. However, the volume of this leg or specifically the westbound left turns are still relatively low at only 30 PM peak hour trips. **In addition, the accuracy and capability of analyzing the existing acceleration lane on SR 49 is deceiving and difficult for the softare to understand. Hence, it is RTE's belief the intersection functions better than the results reported.**

The existing intersection's lane configuration has been well designed and already has left and right turn lanes on SR 49 as well as an acceleration lane on SR 49 for westbound left turns. The westbound approach has more than enough asphalt to function with exclusive left and right turn lanes. Hence, the intersection has been built-out to full capacity as an unsignalized intersection. Installing a traffic signal or modern roundabout at this intersection to improve the potential 30 westbound left's delay is not recommended as the average delay would increase for all traffic movements, additional safety issues could arise for SR 49 traffic, and the overall operation of the approach is expected to function better than reported values. In addition, the signal warrant analyses (below) determine if further mitigation is warranted for the intersection.

As indicated above, the intersection was also analyzed 15 and 20 years from assumed buildout of 2009. Although not required, these analyses are shown below in Table 6 and Table 7 for additional information.

TABLE 6: Project Impact on Future Conditions (15 Years / 2024)

INTX #	Intersection Description	2024 P.M. Peak Worst Leg Delay	2024 P.M. Peak Worst Leg LOS	2024 P.M. Peak Total Intersection Delay	2024 P.M. Peak Total Intersection LOS	2 Second Threshold Exceeded?
1	SR 49 / Rincon Way					
	No Project	70.9	F	0.4	A	
	Plus Project	190.8	F	5.5	A	
	Change in Delay (seconds)	*(WB Shared Approach)*		5.1		Yes

Source: RTE — CCRC Young Tables.xls

TABLE 7: Project Impact on Future Conditions (20 Years / 2029)

INTX #	Intersection Description	2029 P.M. Peak Worst Leg Delay	2029 P.M. Peak Worst Leg LOS	2029 P.M. Peak Total Intersection Delay	2029 P.M. Peak Total Intersection LOS	2 Second Threshold Exceeded?
1	SR 49 / Rincon Way					
	No Project	95.6	F	0.5	A	
	Plus Project	301.6	F	8.1	A	
	Change in Delay (seconds)	*(WB Shared Approach)*		7.6		Yes

Source: RTE — CCRC Young Tables.xls

OTHER CAPACITY CONSIDERATIONS

Signal Warrants

As anticipated, signal warrants have **not** been found to be met at the study area intersection under either existing or any of the future scenarios. The initial traffic volume signal warrant analyses are shown in the Appendices of the report for each scenario. Please refer to these signal warrant analyses shown in the Appendices for further information as additional scenarios were added to the analyses to account for the acceleration lane on SR 49 (with and without southbound volumes) to test the scenarios.

Signal warrants were analyzed under eight scenarios (16 total including southbound volumes), which include the following:

- Existing No Project Conditions
- Existing Plus Project Conditions
- Future 2014 No Project Conditions

- Future 2014 Plus Project Conditions
- Future 2024 No Project Conditions
- Future 2024 Plus Project Conditions
- Future 2029 No Project Conditions
- Future 2029 Plus Project Conditions

In summary, **Table 8** shows the results of these analyses. As shown, signal warrants have not been met under any of the existing or future scenarios analyzed at the study area intersection. In addition, RTE could not find any other traffic studies warranting a signal at the study area intersection. Therefore, a signal is not recommended for this intersection at this time.

TABLE 8: SIGNAL WARRANT ANALYSIS SUMMARY

Appendices Contain Full Reports

#	Scenario Description	Signal Warrants Met?
SR 49 / Rincon Way		
1	2009 No Project	No
2	2009 Plus Project	No
3	2014 No Project	No
4	2014 Plus Project	No
5	2024 No Project	No
6	2024 Plus Project	No
7	2029 No Project	No
8	2029 Plus Project	No

Note 1: Signal Warrant Rules 1, 2, and 3 Succeed (Met)

Source: RTE CCRC Young Tables.xls

Left Turn Storage and Queuing Analysis

Left turn lane analyses were not performed along SR 49 since turn lanes already exist. In addition, since ample roadway width is paved for the westbound approach and the LOS analyses benefit from mutually exclusive turn lanes, a striped left and right turn lane is recommended for Rincon Way at least 50 feet in length. Minor asphalt improvements may not be needed in the field, wherein only stirping would suffice. However, the prime civil engineering firm should verify the roadway width, length, and existing condition of the striped turn lanes to determine if further improvements are needed.

In addition, an acceleration lane on SR 49 northbound (westbound right turn) does not appear warranted.

MITIGATION MEASURES

The study area intersections were analyzed for capacity based upon procedures presented in the Highway Capacity Manual. Both existing and future conditions identify the intersection functioning at a LOS A as whole and a LOS E or F for the westbound approach (worst leg) with or without the project. Considering the study area intersection is fully built-out with turn lanes and an acceleration lane on SR 49 southbound as well as the fact signal warrants are not met for 20 years into the future, no further mitigation is recommended with the exception of clear delineation for the westbound approach's left and right turn lanes.

Therefore, paint or thermorplastic striping and pavement markings are recommended to be installed on Rincon Way for a minimum of 50 feet in length as part of this project's intersection improvements. Nevada County staff and/or Caltrans may determine the need for additional improvements.

OTHER NON-CAPACITY CONSIDERATIONS

Sight Distance at Site Access Locations

No sight distance verification or calculations could be performed for the new roadways or site accesses on Rincon Way. Nevada County should verify that the final site plan improvements are compliant with their standards for the actual access points on these roadways since RTE was unable to review the final plans in the field.

Transit, Pedestrian & Bicycle Facilities

Transit services should be provided directly to the site with this high senior population. Transit stops are recommended to be provided adjacent to or within the site since it was not discussed in the project description. However, these comments and recommendations, or if the developer desires to place a transit stop on Rincon Way, are at the discretion of the Nevada County Transit Division for approval of new transit stop locations. The Nevada County Transit Division may have a few transit shelters already constructed and available for this project's purchase /use. If no transit shelters are available, the Nevada County Transit Division should provide specifications for the placement of a new transit stop (if appropriate).

No pedestrian activity was observed near the site frontage. Due to the rural nature of this project's development area (off-site), suburban sidewalks may not be necessary. However, on-site sidewalks should be included within the project development.

Emergency Vehicles

The new roadways internal and external to the proposed development should be reviewed by the local fire department staff for compliance. A secondary and emergency access is proposed with this project. No emergency vehicle issues have been reviewed or identified for this project at this time.

REFERENCES

1. *Highway Capacity Manual (2000)*, *HCM Special Report 209*, 1985, Updated October 1994, Transportation Research Board, National Research Council.

2. *Trip Generation Manual*, Seventh Edition, Institute of Transportation Engineers.

3. *Manual on Uniform Traffic Control Devices*, 2003, Federal Highway Administration.

4. *Traffic Access and Impact Study for Site Development, A Recommended Practice*, 1991, Institute of Transportation Engineers.

5. *A Policy on The Geometric Design of Highways and Streets*, 1994, American Association of State Highway Transportation Officials.

APPENDIX

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Existing No Proj. PM
Command:	No Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 SR49/Rincon Way													
Base	0	1688	11	7	876	0	0	0	0	4	0	4	2590
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1688	11	7	876	0	0	0	0	4	0	4	2590

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	No	???

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

Intersection #1 SR49/Rincon Way

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:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Lanes:	0	0	2	0	1		1	0	2	0	0		0	0	0	0	0		0	0	1!	0	0	
Final Vol.:	0		1722		11		7		894		0		0		0		0		4		0		4	
ApproachDel:	xxxxxx						xxxxxx						xxxxxx						63.2					

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=8]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2643]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: F[63.2]

Street Name:	SR 49						Rincon Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Channel			Include			Include			Include		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak												
Base Vol:	0 1688		11	7 876		0	0	0	0	4	0	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 1688		11	7 876		0	0	0	0	4	0	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:	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98
PHF Volume:	0 1722		11	7 894		0	0	0	0	4	0	4
Reduct Vol:	0 0		0	0 0		0	0	0	0	0	0	0
Final Vol.:	0 1722		11	7 894		0	0	0	0	4	0	4
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		4.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		6.8 xxxx		6.9
FollowUpTim:	xxxxx xxxx	xxxxx		2.2 xxxx	xxxxx		xxxxx xxxx	xxxxx		3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx		1722 xxxx	xxxxx		xxxx xxxx	xxxxx		2184 xxxx		861
Potent Cap.:	xxxx xxxx	xxxxx		363 xxxx	xxxxx		xxxx xxxx	xxxxx		40 xxxx		303
Move Cap.:	xxxx xxxx	xxxxx		363 xxxx	xxxxx		xxxx xxxx	xxxxx		40 xxxx		303
Volume/Cap:	xxxx xxxx	xxxx		0.02 xxxx	xxxx		xxxx xxxx	xxxx		0.10 xxxx		0.01
Level Of Service Module:												
Queue:	xxxxx xxxx	xxxxx		0.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Stopped Del:	xxxxx xxxx	xxxxx		15.1 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 70	xxxxx	
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx 0.4	xxxxx	
Shrd StpDel:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx 63.2	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			63.2		
ApproachLOS:	*			*			*			F		

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

****

Intersection #1 SR49/Rincon Way

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
HevVeh:		2%			2%			0%			0%	
Grade:		2%			-3%			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

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Existing No Proj. PM
Command:	No Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 SR49/Rincon Way													
Base	0	1688	11	7	0	0	0	0	0	4	0	4	1714
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1688	11	7	0	0	0	0	0	4	0	4	1714

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	No	???

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

****

Intersection #1 SR49/Rincon Way

****

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:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Lanes:	0	0	2	0	1	1	0	2	0	0	0	0	0	0	0	1	0	0	0	1
Final Vol.:	0		1722		11	7		0		0	0		0		0	4		0		4
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					35.1				

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=8]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1749]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: E[35.1]

Street Name:	SR 49						Rincon Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Channel			Include			Include			Include		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	1 0 0	0	1
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak												
Base Vol:	0 1688		11	7	0	0	0	0	0	4	0	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 1688		11	7	0	0	0	0	0	4	0	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:	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98
PHF Volume:	0 1722		11	7	0	0	0	0	0	4	0	4
Reduct Vol:	0 0		0	0	0	0	0	0	0	0	0	0
Final Vol.:	0 1722		11	7	0	0	0	0	0	4	0	4
Critical Gap Module:												
Critical Gp:	xxxxx xxxx		xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9
FollowUpTim:	xxxxx xxxx		xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx		xxxxx	1722	xxxx	xxxxx	xxxx	xxxx	xxxxx	1737	xxxx	861
Potent Cap.:	xxxx xxxx		xxxxx	363	xxxx	xxxxx	xxxx	xxxx	xxxxx	80	xxxx	303
Move Cap.:	xxxx xxxx		xxxxx	363	xxxx	xxxxx	xxxx	xxxx	xxxxx	79	xxxx	303
Volume/Cap:	xxxx xxxx		xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	0.01
Level Of Service Module:												
Queue:	xxxxx xxxx		xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	0.0
Stopped Del:	xxxxx xxxx		xxxxx	15.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	53.1	xxxx	17.1
LOS by Move:	*	*	*	C	*	*	*	*	*	F	*	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 StpDel:	xxxxx xxxx		xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			35.1		
ApproachLOS:	*			*			*			E		

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

****

Intersection #1 SR49/Rincon Way

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	0%	0%
Grade:	2%	-3%	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

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Existing + Proj. PM
Command:	Plus Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	CCRC Young	1.00	CCRC	48.00	51.00	48	51	99	100.0
	Zone 1 Subtotal					48	51	99	100.0
TOTAL						48	51	99	100.0

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Trip Distribution Report
Trip Distribution
Percent Of Trips Default

Zone	To Gates 1	2
1	50.0	50.0

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 SR49/Rincon Way													
Base	0	1688	11	7	876	0	0	0	0	4	0	4	2590
Added	0	0	24	24	0	0	0	0	0	26	0	26	100
Total	0	1688	35	31	876	0	0	0	0	30	0	30	2690

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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 SR49/Rincon Way	F	63.2	0.000	F	219.4	0.000	+156.172 D/V

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	???	No

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

Intersection #1 SR49/Rincon Way

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:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Lanes:	0	0	2	0 1	1	0	2	0 0	0	0	0	0 0	0	0	1!	0 0
Final Vol.:	0		1722	36	32		894	0	0		0	0	31		0	31
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				219.4			

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=3.7]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=61]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2745]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

****

Intersection #1 SR49/Rincon Way

****

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: F[219.4]

****

Street Name:	SR 49						Rincon Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Channel			Include			Include			Include		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!	0	0
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak												
Base Vol:	0 1688		11	7 876		0	0	0	0	4	0	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 1688		11	7 876		0	0	0	0	4	0	4
Added Vol:	0 0		24	24 0		0	0	0	0	26	0	26
In-Process:	0 0		0	0 0		0	0	0	0	0	0	0
Initial Fut:	0 1688		35	31 876		0	0	0	0	30	0	30
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:	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98
PHF Volume:	0 1722		36	32 894		0	0	0	0	31	0	31
Reduct Vol:	0 0		0	0 0		0	0	0	0	0	0	0
Final Vol.:	0 1722		36	32 894		0	0	0	0	31	0	31
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		4.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		6.8 xxxx		6.9
FollowUpTim:	xxxxx xxxx	xxxxx		2.2 xxxx	xxxxx		xxxxx xxxx	xxxxx		3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx		1722 xxxx	xxxxx		xxxx xxxx	xxxxx		2233 xxxx		861
Potent Cap.:	xxxx xxxx	xxxxx		363 xxxx	xxxxx		xxxx xxxx	xxxxx		37 xxxx		303
Move Cap.:	xxxx xxxx	xxxxx		363 xxxx	xxxxx		xxxx xxxx	xxxxx		35 xxxx		303
Volume/Cap:	xxxx xxxx	xxxx		0.09 xxxx	xxxx		xxxx xxxx	xxxx		0.88 xxxx		0.10
Level Of Service Module:												
Queue:	xxxxx xxxx	xxxxx		0.3 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Stopped Del:	xxxxx xxxx	xxxxx		15.9 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	62	xxxxx
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx	4.7	xxxxx
Shrd StpDel:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx	219	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			219.4		
ApproachLOS:	*			*			*			F		

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

****

Intersection #1 SR49/Rincon Way

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	0%	0%
Grade:	2%	-3%	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

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: CCRC Young													
1	SR49/Rincon W	0	0	24	24	0	0	0	0	0	26	0	26

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Existing + Proj. PM
Command:	Plus Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	CCRC Young	1.00	CCRC	48.00	51.00	48	51	99	100.0
	Zone 1 Subtotal					48	51	99	100.0
TOTAL						48	51	99	100.0

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Trip Distribution Report
Trip Distribution
Percent Of Trips Default

Zone	To Gates 1	2
1	50.0	50.0

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 SR49/Rincon Way													
Base	0	1688	11	7	0	0	0	0	0	4	0	4	1714
Added	0	0	24	24	0	0	0	0	0	26	0	26	100
Total	0	1688	35	31	0	0	0	0	0	30	0	30	1814

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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 SR49/Rincon Way	E	35.1	0.000	F	55.5	0.000	+20.427 D/V

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	???	No

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

****

Intersection #1 SR49/Rincon Way

****

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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	1 0 0	0	1
Final Vol.:	0 1722		36	32	0	0	0	0	0	31	0	31
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			55.5		

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.9]
   FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=61]
   FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1851]
   SUCCEED - Total volume greater than or equal to 650 for intersection
             with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: F[55.5]

Street Name:	SR 49						Rincon Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Channel			Include			Include			Include		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	1 0 0	0	1
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak												
Base Vol:	0 1688		11	7		0	0		0	4		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 1688		11	7		0	0		0	4		4
Added Vol:	0 0		24	24		0	0		0	26		26
In-Process:	0 0		0	0		0	0		0	0		0
Initial Fut:	0 1688		35	31		0	0		0	30		30
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:	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98
PHF Volume:	0 1722		36	32		0	0		0	31		31
Reduct Vol:	0 0		0	0		0	0		0	0		0
Final Vol.:	0 1722		36	32		0	0		0	31		31
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1 xxxx xxxxx			xxxxx xxxx xxxxx			6.8 xxxx		6.9
FollowUpTim:	xxxxx xxxx xxxxx			2.2 xxxx xxxxx			xxxxx xxxx xxxxx			3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			1722 xxxx xxxxx			xxxx xxxx xxxxx			1786 xxxx		861
Potent Cap.:	xxxx xxxx xxxxx			363 xxxx xxxxx			xxxx xxxx xxxxx			74 xxxx		303
Move Cap.:	xxxx xxxx xxxxx			363 xxxx xxxxx			xxxx xxxx xxxxx			69 xxxx		303
Volume/Cap:	xxxx xxxx		xxxx	0.09 xxxx		xxxx	xxxx xxxx		xxxx	0.44 xxxx		0.10
Level Of Service Module:												
Queue:	xxxxx xxxx xxxxx			0.3 xxxx xxxxx			xxxxx xxxx xxxxx			1.7 xxxx		0.3
Stopped Del:	xxxxx xxxx xxxxx			15.9 xxxx xxxxx			xxxxx xxxx xxxxx			92.8 xxxx		18.2
LOS by Move:	*	*	*	C	*	*	*	*	*	F	*	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 StpDel:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			55.5		
ApproachLOS:	*			*			*			F		

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

****

Intersection #1 SR49/Rincon Way

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		2%			2%			0%			0%	
Grade:		2%			-3%			0%			0%	
Peds/Hour:		0			0			0			0	
LaneWidth:		12 feet			12 feet			12 feet			12 feet	

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: CCRC Young													
1	SR49/Rincon W	0	0	24	24	0	0	0	0	0	26	0	26

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Future No Proj. PM
Command:	No Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 SR49/Rincon Way													
Base	0	1857	12	8	0	0	0	0	0	4	0	4	1885
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1857	12	8	0	0	0	0	0	4	0	4	1885

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	No	???

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

****

Intersection #1 SR49/Rincon Way

****

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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	1 0 0	0	1
Final Vol.:	0 1895		12	8	0	0	0	0	0	4	0	4
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			44.2		

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=9]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1924]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: E[44.2]

Street Name:	SR 49								Rincon Way							
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Channel				Include				Include				Include			
Lanes:	0	0	2	0 1	1	0	2	0 0	0	0	0	0 0	1	0	0	0 1
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak																
Base Vol:	0	1688		11	7		0	0	0		0	0	4		0	4
Growth Adj:	1.10	1.10		1.10	1.10		1.10	1.10	1.10		1.10	1.10	1.10		1.10	1.10
Initial Bse:	0	1857		12	8		0	0	0		0	0	4		0	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:	0.98	0.98		0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98
PHF Volume:	0	1895		12	8		0	0	0		0	0	4		0	4
Reduct Vol:	0	0		0	0		0	0	0		0	0	0		0	0
Final Vol.:	0	1895		12	8		0	0	0		0	0	4		0	4
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx		xxxxx	4.1		xxxx	xxxxx	xxxxx		xxxx	xxxxx	6.8		xxxx	6.9
FollowUpTim:	xxxxx	xxxx		xxxxx	2.2		xxxx	xxxxx	xxxxx		xxxx	xxxxx	3.5		xxxx	3.3
Capacity Module:																
Cnflict Vol:	xxxx	xxxx		xxxxx	1895		xxxx	xxxxx	xxxx		xxxx	xxxxx	1910		xxxx	947
Potent Cap.:	xxxx	xxxx		xxxxx	311		xxxx	xxxxx	xxxx		xxxx	xxxxx	61		xxxx	266
Move Cap.:	xxxx	xxxx		xxxxx	311		xxxx	xxxxx	xxxx		xxxx	xxxxx	60		xxxx	266
Volume/Cap:	xxxx	xxxx		xxxx	0.03		xxxx	xxxx	xxxx		xxxx	xxxx	0.07		xxxx	0.02
Level Of Service Module:																
Queue:	xxxxx	xxxx		xxxxx	0.1		xxxx	xxxxx	xxxxx		xxxx	xxxxx	0.2		xxxx	0.1
Stopped Del:	xxxxx	xxxx		xxxxx	16.9		xxxx	xxxxx	xxxxx		xxxx	xxxxx	69.6		xxxx	18.8
LOS by Move:	*	*		*	C		*	*	*		*	*	F		*	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 StpDel:	xxxxx	xxxx		xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx	xxxxx		xxxx	xxxxx
Shared LOS:	*	*		*	*		*	*	*		*	*	*		*	*
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				44.2			
ApproachLOS:	*				*				*				E			

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

****

Intersection #1 SR49/Rincon Way

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	0%	0%
Grade:	2%	-3%	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

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Future No Proj. PM
Command:	No Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 SR49/Rincon Way													
Base	0	2161	14	9	1121	0	0	0	0	5	0	5	3315
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2161	14	9	1121	0	0	0	0	5	0	5	3315

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	No	???

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

****

Intersection #1 SR49/Rincon Way

****

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:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Lanes:	0	0	2	0	1		1	0	2	0	0		0	0	0	0	0		0	0	1!0		0	
Final Vol.:		0	2205		14			9	1144		0			0	0		0			5	0		5	
ApproachDel:		xxxxxx						xxxxxx						xxxxxx						199.7				

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=3383]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: F[199.7]

Street Name:	SR 49						Rincon Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Channel			Include			Include			Include		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	0 0 1!0	0	
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak												
Base Vol:	0 1688		11	7 876		0	0 0		0	4 0		4
Growth Adj:	1.28 1.28		1.28	1.28 1.28		1.28	1.28 1.28		1.28	1.28 1.28		1.28
Initial Bse:	0 2161		14	9 1121		0	0 0		0	5 0		5
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:	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98
PHF Volume:	0 2205		14	9 1144		0	0 0		0	5 0		5
Reduct Vol:	0 0		0	0 0		0	0 0		0	0 0		0
Final Vol.:	0 2205		14	9 1144		0	0 0		0	5 0		5
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		4.1 xxxx	xxxxx	xxxxx	xxxx xxxxx			6.8 xxxx		6.9
FollowUpTim:	xxxxx xxxx	xxxxx		2.2 xxxx	xxxxx	xxxxx	xxxx xxxxx			3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx		2205 xxxx	xxxxx		xxxx xxxx xxxxx			2795 xxxx		1102
Potent Cap.:	xxxx xxxx	xxxxx		235 xxxx	xxxxx		xxxx xxxx xxxxx			15 xxxx		210
Move Cap.:	xxxx xxxx	xxxxx		235 xxxx	xxxxx		xxxx xxxx xxxxx			15 xxxx		210
Volume/Cap:	xxxx xxxx	xxxx		0.04 xxxx	xxxx		xxxx xxxx xxxx			0.35 xxxx		0.02
Level Of Service Module:												
Queue:	xxxxx xxxx	xxxxx		0.1 xxxx	xxxxx	xxxxx	xxxx xxxxx	xxxxx	xxxx	xxxxx		
Stopped Del:	xxxxx xxxx	xxxxx		20.9 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 28		xxxxx
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx xxxxx			xxxxx 1.2		xxxxx
Shrd StpDel:	xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx xxxxx			xxxxx 200		xxxxx
Shared LOS:	* *	*		* *	*		* *	*		* F		*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			199.7		
ApproachLOS:	*			*			*			F		

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	2%	2%	0%	0%
Grade:	2%	-3%	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

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Scenario Report

Scenario:	Future No Proj. PM
Command:	No Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 SR49/Rincon Way													
Base	0	2161	14	9	0	0	0	0	0	5	0	5	2194
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2161	14	9	0	0	0	0	0	5	0	5	2194

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 1 SR49/Rincon Way	No	???

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

Signal Warrant Report

Intersection #1 SR49/Rincon Way

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:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	1 0 0	0	1
Final Vol.:	0 2205		14	9	0	0	0	0	0	5	0	5
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			70.9		

Approach[westbound][lanes=2][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
FAIL - Vehicle-hours less than 5 for two or more lane approach.
Signal Warrant Rule #2: [approach volume=10]
FAIL - Approach volume less than 150 for two or more lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2239]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: F[70.9]

Street Name:	SR 49						Rincon Way					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Channel			Include			Include			Include		
Lanes:	0 0 2	0	1	1 0 2	0	0	0 0 0	0	0	1 0 0	0	1
Volume Module: >> Count Date: 3 Dec 2008 << PM Peak												
Base Vol:	0 1688		11	7		0	0		0	4		4
Growth Adj:	1.28 1.28		1.28	1.28 1.28		1.28	1.28 1.28		1.28	1.28 1.28		1.28
Initial Bse:	0 2161		14	9		0	0		0	5		5
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:	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98	0.98 0.98		0.98
PHF Volume:	0 2205		14	9		0	0		0	5		5
Reduct Vol:	0 0		0	0		0	0		0	0		0
Final Vol.:	0 2205		14	9		0	0		0	5		5
Critical Gap Module:												
Critical Gp:	xxxxx xxxx xxxxx			4.1 xxxx xxxxx			xxxxx xxxx xxxxx			6.8 xxxx		6.9
FollowUpTim:	xxxxx xxxx xxxxx			2.2 xxxx xxxxx			xxxxx xxxx xxxxx			3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx xxxxx			2205 xxxx xxxxx			xxxx xxxx xxxxx			2223 xxxx		1102
Potent Cap.:	xxxx xxxx xxxxx			235 xxxx xxxxx			xxxx xxxx xxxxx			38 xxxx		210
Move Cap.:	xxxx xxxx xxxxx			235 xxxx xxxxx			xxxx xxxx xxxxx			37 xxxx		210
Volume/Cap:	xxxx xxxx xxxx			0.04 xxxx xxxx			xxxx xxxx xxxx			0.14 xxxx		0.02
Level Of Service Module:												
Queue:	xxxxx xxxx xxxxx			0.1 xxxx xxxxx			xxxxx xxxx xxxxx			0.4 xxxx		0.1
Stopped Del:	xxxxx xxxx xxxxx			20.9 xxxx xxxxx			xxxxx xxxx xxxxx			119.1 xxxx		22.6
LOS by Move:	*	*	*	C	*	*	*	*	*	F	*	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 StpDel:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx xxxx xxxxx		
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			70.9		
ApproachLOS:	*			*			*			F		

CCRC Young Enterprises
Traffic Impact Analysis Data
Roundabouts & Traffic Engineering

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

Intersection #1 SR49/Rincon Way

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	2%			2%			0%			0%		
Grade:	2%			-3%			0%			0%		
Peds/Hour:	0			0			0			0		
LaneWidth:	12 feet			12 feet			12 feet			12 feet		

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour