

January 31, 2020

Mr. Matt Kelley  
**Nevada County Planning Department**  
950 Maidu Avenue, Suite 170  
Nevada City, CA 95959

**RE: TRIP GENERATION QUALITATIVE ASSESSMENT– RINCON DEL RIO,  
NEVADA COUNTY, CA**

Dear Mr. Kelley:

KD Anderson & Associates, Inc. (KDA) has completed our qualitative trip generation comparison of the Rincon Del Rio site along State Route 49 (SR 49) in Nevada County.

**Background.** The Rincon Del Rio site is a 345 unit Continuing Care Retirement Community (CCRC) on about 215 acres. The original traffic impact analysis (TIA) was prepared in 2011 as part of the DEIR which was completed in 2012.

The Project is designed to serve a senior population of 415 people within 345 living units consisting of the following:

- Independent Living (Attached and Detached) Cottages and Condominium Units
- Independent Living Condominiums in the Village Center
- Support Service Village Center
- Lodge buildings
- Memory/Assisted Living accommodations

The applicant proposes to maintain the same basic campus layout but according to the November 2018 Project Amendment allows for relocation of some uses with a change in the residential unit type as follows:

- Rearrange the Village Center area by relocating the Five Buildings in the Support Service Village Center to the main access road at the Projects entrance. Reduce the support use area from 43,800 S.F. to 30,000 S.F. and allow for 20 condominium second story residential independent living lofts.
- Relocate the Memory/Assisted Care Facility from south of the Village Center to north of Support Service/independent living lofts near the project's entry.
- Relocate the tennis/pickleball courts from the project's entrance to the farm area east of the orchard.
- Reduce the size of each of the five apartment buildings, adjust their orientation on the site and reduce the 98 independent living apartment units to allow for 56 attached condominium independent living units in four 14-unit buildings and 150 condominium units in 30 5-unit buildings.

- Change the type of residential independent living units from the permitted 216 consisting of Cottages, Duplex's, 4-Plexes, Cohousing and Lodges to 78 Cottage Units and 24 Bungalow Units for a total of 102 units.
- Allow for individual ownership of each of the 102 residential independent living units on separate parcels and 201 attached units and 20 loft units for a total of 226 units to be in airspace condominium units for a total of 323

The proposed amendment to the Rincon Del Rio Comprehensive Master Plan will convert the duplex and 4-Plex units of the approved Master Plan to 150 units in thirty 5-unit condominium buildings and replaces the 98 apartment units of the approved Master Plan with 56 condominium units and 26 condominium loft units in the Village Service Center.

The November 2018 Project Amendment notes that the project is anticipated to be constructed in up to 10 phases with phases possibly combined or modified based on market conditions. Phase 1 will consist primarily of construction of the project infrastructure, 15 Cottage units and four 5-unit condominium buildings. Phase 2 includes 24 Bungalow units while Phases 3 and 4 include the attached Condominium units. Phase 5 would construct the remaining Cottage units and 5-unit condominium buildings. The Village Service Center and accompanying condominium units would be constructed thereafter. The Project Amendment does not identify during which phase the Group Health Memory Care facility would be constructed. It is assumed this would be developed sometime after Phase 5.

While the combination of housing options will be modified, once the project is completed the site will continue to function as a CCRC.

**Trip Generation.** Nevada County has requested that a qualitative assessment be conducted to compare and confirm that the project will not generate more trips than were identified in the 2011 TIA.

Similar to the 2011 TIA the ITE publication *Trip Generation* was used to project the anticipated traffic on the site. The ITE *Trip Generation* publication is an industry-standard reference document that estimates the number of vehicle trips generated by a project based on historical data for those uses. The 2011 study used the 8<sup>th</sup> Edition of *Trip Generation*; however, the most current version is the 10<sup>th</sup> Edition which was published in December 2017.

ITE *Trip Generation* defines a continuing care retirement community (CCRC) as “a land use that provides 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 residents to live in one community as their medical needs change. The communities may also contain special services such as medical, dining, recreational, and some limited, supporting retail facilities. CCRCs are usually self-contained villages.”

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However, it does not contain information for all types of land uses, and for many types of land uses, the rates are based on limited survey data and may not be statistically valid. At the time the 8<sup>th</sup> Edition was published limited data was available for CCRC's; thus, the average rates for daily, a.m. and p.m. peak hours were used. Additional data has been collected and is provided in the 10<sup>th</sup> Edition. The additional data includes fitted curve equations in addition to the average rates as more research has since been conducted.

*Trip Generation* provides a methodology to determine when to consider application of average rates or when to use fitted curve equations. Fitted curve equations should be used when there are at least 20 data points for the land use and the correlation coefficient ( $R^2$ ), the measure of correlation between two variables; a coefficient of 1 indicates strong correlation while a coefficient of 0 indicates randomness. Additionally, the correlation coefficient should have a value of at least 0.75, the fitted curve falls between the data points and the standard deviation is more than 55% of the average rate.

The average rate, also known as the weighted average rate, is used when there are at least three, and preferably more than six data points, the  $R^2$  value for the fitted curve is less than 0.75 or a fitted curve equation is unavailable and the standard deviation for the average rate is less than 55% of the average rate.

It is possible that all the criteria described above can be met, thereby allowing either method to be used that best represents the known data points at the value of the independent variable, i.e. the number of occupied units for this analysis.

The project will provide 345 attached and detached housing units on the 210-acre site, all of which are assumed to be occupied. Table 1 presents a comparison of trips generated between the 2011 parameters and current parameters. The 2019 analysis provides calculations for both average rate as well as fitted equations.

### **Evaluation / Findings**

The 2011 traffic impact analysis for the Rincon Del Rio Continuing Care Retirement Community project estimated 969 daily trips, 62 a.m. peak hour trips and 100 p.m. peak hour trips would be generated by the project. The project is proposed to be revised with a change in the combination of housing options; the project will maintain 345 units on the site. The two methods described above were considered in analyzing the revised site. In selecting which method to use the criteria identified in *Trip Generation* was followed. Although the correlation coefficients are high using the fitted curve equation methodology ( $>0.95$ ) it is recommended that the average rate methodology be used because of the number of data points that exist. As noted, ITE suggests that the fitted curve equations be used when 20 or more data points are present. However, there are less than 20 data points for daily, a.m. peak hour and p.m. peak hour time periods. For daily traffic only 9 data points exist while for both a.m. and p.m. peak hours there are 14 data points.

Comparing the 2011 trips to the updated average trip rate data, the project is expected to generate 863 daily trips, 52 a.m. peak hour trips and 69 p.m. peak hour trips. This is a net decline of 106 daily trips, 10 a.m. peak hour trips and 31 p.m. peak hour trips. Daily trips are shown to provide

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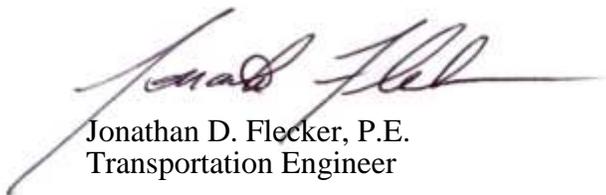
information on the projected trips to and from the site; however, this is informational only as the Circulation Element of the County’s General Plan considers peak hour when determining level of service.

<b>TABLE 1 TRIP GENERATION COMPARISON</b>									
Land Use / Source	Variable	Size	Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out
<b>2011 Traffic Impact Analysis – 8<sup>th</sup> Edition ITE Trip Generation</b>									
Continuing Care Retirement Community (LU 255)	Unit	345	2.81	0.18	64%	36%	0.29	48%	52%
<b>Total Trips</b>			<b>969</b>	<b>62</b>	40	22	<b>100</b>	48	52
<b>November 2018 Complete Project Amendment– 10<sup>th</sup> Edition ITE Trip Generation (2017)</b>									
Continuing Care Retirement Community (LU 255)	Occupied Unit	345	2.50	0.15	65%	35%	0.20	40%	60%
<b>Total Trips (Average Rate)</b>			<b>863</b>	<b>52</b>	34	18	<b>69</b>	28	41
<b>November 2018 Complete Project Amendment– 10<sup>th</sup> Edition ITE Trip Generation (2017) (Fitted Curve)</b>									
Continuing Care Retirement Community (LU 255)	Occupied Unit	345	2.83†	0.19‡	65%	35%	0.30◇	40%	60%
<b>Total Trips (Fitted Curve Equation)</b>			<b>977</b>	<b>66</b>	43	23	<b>104</b>	42	62
Source: ITE Trip Generation, 10 <sup>th</sup> Edition 2017 † $T = 2.32(X) + 176.28$ ( $R^2 = 0.98$ ); rate shown calculated ‡ $T = 0.13(X) + 21.28$ ( $R^2 = 0.95$ ); rate shown calculated ◇ $T = 0.13(X) + 59.19$ ( $R^2 = 0.95$ ); rate shown calculated Numbers may not equal due to rounding									

Should you have any questions please free to contact me at (916) 660-1555 or you may reach me via e-mail at [jflecker@kdanderson.com](mailto:jflecker@kdanderson.com).

Sincerely,

**KD Anderson & Associates, Inc.**



Jonathan D. Flecker, P.E.  
 Transportation Engineer

Cc: Mr. Martin Wood, SCO Planning & Engineering, Inc.

Attachment

**KDA**

# Land Use: 255

## Continuing Care Retirement Community

### Description

A continuing care retirement community (CCRC) is a land use that provides 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 residents to live in one community as their medical needs change. The communities may also contain special services such as medical, dining, recreational, and some limited, supporting retail facilities. CCRCs are usually self-contained villages. Senior adult housing—detached (Land Use 251), senior adult housing—attached (Land Use 252), congregate care facility (Land Use 253), assisted living (Land Use 254), and nursing home (Land Use 620) are related uses.

### Additional Data

***Caution should be used when applying these data. CCRCs are relatively new and unique land uses. These developments consist of various housing components (dwelling units, rooms, and beds<sup>1</sup>) that often exist in varying proportions. Therefore, the use of a single housing component does not fully describe the trip generation characteristics of these communities. Based upon the limited data submitted for this land use, it was determined that a comprehensive independent variable, units, was the most appropriate descriptor of the characteristics. This variable is defined as an aggregate of all living accommodations common to these communities. The independent variable, occupied units, provides data on the number of units that were occupied at the study sites at the time of the survey.***

***To illustrate the varying proportions of housing options that exist, the following table is provided for nine of the CCRCs included in this land use as an example. Users are strongly cautioned to exercise proper professional judgment in applying these data.***

Living Accommodations at CCRCs		
Occupied Dwelling Units/Rooms <sup>2</sup>	Occupied Beds	Total Occupied Units
215	46	261
220	151	371
620	100	720
312	166	478
210	37	247
323	120 <sup>3</sup>	443
233	121 <sup>3</sup>	354
209	33	242
234	94	328

The sites were surveyed in the 1980s, the 1990s, and the 2000s in Connecticut, Illinois, Maryland, Massachusetts, Pennsylvania, and Virginia.

***A complete study of CCRCs requires future analysis of their various components. Therefore, it is important to collect as much information as possible. At the very least, the total number of dwelling units, rooms, and beds should be obtained; if possible, the number of corresponding occupied units should be recorded as well.***

### **Source Numbers**

244, 253, 388, 501, 576, 713, 715

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<sup>1</sup> Dwelling units, rooms, and beds are the independent variables typically used to represent independent housing (detached/attached/congregate care), assisted living facilities, and nursing homes, respectively. Occupied dwelling units/rooms may be private or shared accommodations.

<sup>2</sup> Total number of combined dwelling units and rooms available within a community.

<sup>3</sup> For analysis purposes, an assumption was made that the total number of beds equaled the total number of occupied beds.