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June 1, 2016

Ms. Laurel L. Impett, AICP
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, California 94102

Subject: ***Review of Transportation and Circulation Analysis***
Martis Valley West Parcel Specific Plan Final Environmental Impact Report

Dear Ms. Impett:

On December 2, 2015, MRO Engineers, Inc., completed a letter report documenting our review of the "Transportation and Circulation" analysis included in the Draft Environmental Impact Report (DEIR) for the proposed Martis Valley West Parcel Specific Plan (MVWPSP) in Placer County, California. That DEIR, which was prepared by Ascent Environmental, Inc., for the Placer County Planning Services Division in October 2015, incorporated a traffic impact analysis completed by Fehr & Peers. Our review of that analysis revealed several issues that must be addressed prior to approval by Placer County of the proposed project and its environmental documentation.

The Final Environmental Impact Report (FEIR) for the Martis Valley West Parcel Specific Plan has recently been released. Review of that document revealed that our comment letter was ignored and, consequently, no responses were provided. Some of our comments were summarized in the comment letter submitted by Shute, Mihaly & Weinberger on December 18, 2015, and the FEIR provided responses to those items. In any event, this letter report documents the results of our detailed review of the FEIR responses to comments.

REVIEW OF FEIR RESPONSES TO COMMENTS

Based on our review of the FEIR for the Martis Valley West Parcel Specific Plan project, we have determined that a number of transportation and circulation issues have not been adequately dealt with. These issues are presented below.

1. ***Incorrect Trip Generation Estimate*** – In our December 2, 2015, we commented that the trip generation estimate for the proposed MVWPSP contains several errors, which have the effect of substantially understating the volume of traffic associated with the project, as detailed below.

   A. Inaccurate Commercial/Retail Trip Generation Estimate

   The trip generation estimates developed for the DEIR traffic analysis are summarized in Table 10-11. (DEIR, p. 10-23) As shown there, the commercial/retail space is treated as a single unit having 34,500 SF. However, the DEIR says that this space might be distributed throughout the project area. In other words, the commercial/retail space might actually be made up of several smaller commercial/retail facilities. To demonstrate the significance of this issue, Table 1 provides a trip generation comparison for the following three hypothetical commercial/retail development scenarios:

   - Scenario A: A single building with 34,500 SF (as documented in the DEIR),
   - Scenario B: Two commercial/retail buildings, each with 17,250 SF, and

- Scenario C: Three commercial/retail buildings, each with 11,500 SF.

Table 1
Commercial/Retail Trip Generation Comparison[1]

Size	Daily Trips	PM Peak-Hour Trips		
		In	Out	Total
Scenario A: One Commercial/Retail Building - 34,500 SF[2]				
34,500 SF	3,400	141	153	294
TOTAL	**3,400**	**141**	**153**	**294**
Scenario B: Two Commercial/Retail Buildings - 17,250 SF Each				
17,250 SF	2,167	89	96	185
17,250 SF	2,167	89	96	185
TOTAL	**4,334**	**178**	**194**	**370**
Difference[3]	**934 (+27%)**			**76 (+26%)**
Scenario C: Three Commercial/Retail Buildings - 11,500 SF Each				
11,500 SF	1,665	68	73	141
11,500 SF	1,665	68	73	141
11,500 SF	1,665	68	73	141
TOTAL	**4,995**	**204**	**219**	**423**
Difference[3]	**1,595 (+47%)**			**423 (+44%)**

Notes:
1 Reference: Institute of Transportation Engineers, *Trip Generation Manual*, 9th Edition, 2012.
2 As analyzed in the DEIR "Transportation and Circulation" section.
3 Difference compared to Scenario A.

The actual distribution and configuration of the commercial/retail space makes a substantial difference in terms of how much traffic is generated by that land use. As shown, if the space is provided in three equal-sized components, the daily trip generation is 47 percent higher than if all of the space is in a single location. In the PM peak hour, a 44 percent increase in trips would result from splitting the space up in this way.

In fact, contrary to the assertion in the FEIR (Response to Comment IO41-33, p. 3.5-441) that, ". . . it is unknown at this time where and in what configuration the commercial uses would be developed," DEIR Exhibit 3-7, MVWPSP – West Parcel Conceptual Land Use Plan (p. 3-15), clearly indicates that two sites have been designated for neighborhood commercial use. This is generally equivalent to Scenario B above (although the commercial square footage probably would not be evenly divided, as is assumed in our hypothetical example). That scenario indicates that the volume of commercially-generated traffic on a daily basis would be 27 percent higher than the DEIR indicated and 26 percent higher in the PM peak hour. Thus, the FEIR's assertion that the approach taken in the traffic analysis is "very conservative" and "overly conservative" is obviously false.

The FEIR further asserts that a trip generation analysis that reasonably reflects the fact that the commercial space would be distributed on multiple sites would result in an excessive trip generation rate, in terms of trips per on-site residential unit. First, this statement is based on the unreasonable assumption that only residents of the proposed project will patronize the retail facilities. Second, it ignores the fact that the commercial trip generation estimates would be subject to adjustment to reflect "internal trips," which would reduce the effective trip generation rate. (Such an adjustment is part of the traffic analysis documented in the DEIR but, as described in detail below, the process employed in making this adjustment is incorrect.) Finally, if the trip rate is, in fact, too high, that may be an indication that too much commercial space is proposed. A smaller allocation of commercial space would generate less traffic, leading to a lower trip rate per residential unit.

B. Invalid Part-Time Residential Trip Generation Rates

The trip generation estimates for "part-time" or "second" homes were based on the average rates in the "Recreational Homes" land use category in the ITE *Trip Generation Manual* (Ninth Edition, 2012). That land use category is appropriate, except for the fact that (with the exception of the Sunday peak hour) the trip rates are based on studies at only two locations (i.e., they are the weighted average of two numbers). In fact, the pages in the *Trip Generation Manual* for weekday daily, weekday PM peak hour, and Sunday daily conditions each contain the following notation in **bold** font: "**Caution – Use Carefully – Small Sample Size**."

According to the ITE *Trip Generation Handbook* (Third Edition, August 2014, p. 26), selection of the appropriate trip generation factor should be based, in part, on the following guidelines:

- "Use [the] Fitted Curve Equation when:
  - A fitted curve equation is provided and the data plot has at least 20 data points"
- "Use [the] Weighted Average Rate when:
  - The data plot has at least three data points (and, preferably, six or more)"
- "Collect Local Data when:
  - Data plot has only one or two data points (and, preferably, when five or fewer);
  - Independent variable value is not within range of data"

As noted above, the "Recreational Homes" database presented in the ITE document is deficient, as it contains only two data points, rather than the three (or, preferably, six or more) called for.

Further, the number of second homes proposed at the West Parcel (620 dwelling units) is not within the range of the data set included in the *Trip Generation Manual*. Those two data points reflect projects with 700 units and about 1,480 units. Clearly, the West Parcel is smaller than the smaller of those two, so it is not within the range of the data presented in the *Trip Generation Manual*.

In summary, the trip generation rates presented in the "Recreational Homes" category in the ITE *Trip Generation Manual* cannot be considered to be reliable indicators of the volume of traffic associated with the 620 second/part-time homes, which represent over 80 percent of the residential development proposed at the West Parcel. We note that the FEIR contains no response to this comment.

C. Incorrect Internal Trip Adjustment

The trip generation estimates documented in DEIR Table 10-11 include extensive adjustments to reflect "internal trips" at the proposed project. Internal trips are made completely within the boundaries of the proposed project; they never reach SR 267 or any other road outside the project itself. The primary example of this type of trip would be a project resident traveling to or from one of the commercial sites within the project. In contrast, "external trips" have one end (either origin or destination) within the project and the other end outside the project. For example, a trip by a project resident from home to Truckee would be an external trip (as would the return trip).

The following adjustments were incorporated into the analysis to reflect internal travel within the project site (DEIR, pp. 10-21 – 10-22):

- Commercial: "Trips to and from the commercial areas are expected to be generated by the project's residential uses except for employee trips and deliveries. Therefore, to reflect a conservative approach, 80 percent of the commercial trips were assumed to be internal and 20 percent external."

- Residential – Second Homes: "No further reduction of internal trips for these Second Homes is necessary or warranted," because the internal trips are already accounted for within the trip generation rates for this land use.

- Residential – Full-Time Homes: "It was assumed 10 percent of trips by full-time residents would be to and from the internal commercial uses, while the remaining would be external trips."

First, we must point out that the internal trip percentages employed in the analysis are apparently arbitrary and without any basis in fact. No documentation or evidence is provided in support of the specific percentages. Instead, they seem to have been fabricated from thin air.

Second, we note that the same internal trip percentages have been applied to all time periods in the DEIR analysis. In reality, research indicates that these factors vary throughout the course of the day. It is, therefore, inappropriate and incorrect to apply the same factors across the board for all time periods.

The internal capture percentages assumed for each land use are reflected in DEIR Table 10-11, which shows how much traffic the proposed project will generate. However, that table shows only the derived external trips; none of the internal trip values are presented, which prevents the reader from fully understanding the assumed travel patterns associated with the proposed project. To assist in providing such an understanding, we have prepared Tables 2 and 3, which present both internal and external trip estimates by land use for each of the analysis scenarios. Table 2 addresses weekday conditions, while Table 3 shows values for Sunday. (More detailed versions of these tables, in which the residential uses are broken down by type, are presented in Attachment A.) The internal trip percentages presented in Tables 2 and 3 are the same as those used in the DEIR traffic analysis.

Table 2
DEIR Project Trip Generation Estimates[1]
Weekday Internal, External and Total Trips

Land Use	Size	Internal Capture	Project Trip Estimate		
			Internal	External	Total
Weekday Daily Conditions					
Full-Time Residential[2]	140 DU[3]	10%	118	1,066	1,184
Part-Time Residential[4]	620 DU	0%	0	2,239	2,239
Commercial/Retail	34,500 SF[5]	80%	2,720	680	3,400
		TOTAL	**2,838**	**3,985**	**6,823**
Weekday PM Peak-Hour Conditions					
Full-Time Residential[2]	140 DU	10%	12	109	121
Part-Time Residential[4]	620 DU	0%	0	162	162
Commercial/Retail	34,500 SF	80%	235	59	294
		TOTAL	**247**	**330**	**577**

Notes:
1 Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
2 Includes 100 single-family homes and 40 townhomes.
3 Dwelling unit.
4 Includes 400 single-family homes, 160 townhomes, and 60 cabins.
5 Square feet.

Table 3
DEIR Project Trip Generation Estimates[1]
Sunday Internal, External and Total Trips

Land Use	Size	Internal Capture	Project Trip Estimate		
			Internal	External	Total
Sunday Daily Conditions					
Full-Time Residential[2]	140 DU[3]	10%	106	950	1,056
Part-Time Residential[4]	620 DU	0%	0	1,817	1,817
Commercial/Retail	34,500 SF[5]	80%	696	174	870
		TOTAL	**802**	**2,941**	**3,743**
Sunday Peak-Hour Conditions					
Full-Time Residential[2]	140 DU	10%	***11***	***93***	***104***
Part-Time Residential[4]	620 DU	0%	***0***	***224***	***224***
Commercial/Retail	34,500 SF	80%	***86***	***22***	***108***
		TOTAL	**97**	**339**	**436**

Notes:
1 Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
2 Includes 100 single-family homes and 40 townhomes.
3 Dwelling unit.
4 Includes 400 single-family homes, 160 townhomes, and 60 cabins.
5 Square feet.

As described above, the internal trips within the West Parcel will occur between the commercial/retail space and the full-time residential units. As in the DEIR traffic analysis, no internal trips were assumed to be associated with the part-time residential units, as those trips are believed to be already accounted for by the trip generation rates employed. (DEIR, p. 10-21)

Tables 2 and 3 reveal a significant problem that is common to all four analysis periods. In particular, the number of internal trips associated with the commercial/retail land use far exceeds the number of internal trips generated by the full-time residential units. In fact, on weekdays the commercial-based internal trips exceed the total number of trips generated by the full-time residential units.

- Weekday Daily Conditions
  - Full-time Residential Internal Trips: 118
  - Full-time Residential Total Trips: 1,184
  - Commercial/Retail Internal Trips: 2,720, which is 23 times the number of residential internal trips and over double the total number of full-time residential trips.
- Weekday PM Peak Hour
  - Full-time Residential Internal Trips: 12
  - Full-time Residential Total Trips: 121
  - Commercial/Retail Internal Trips: 235, which is 19 times the number of residential internal trips and almost double the total number of full-time residential trips.
- Sunday Daily Conditions
  - Full-time Residential Internal Trips: 105
  - Full-time Residential Total Trips: 1,055
  - Commercial/Retail Internal Trips: 697, which is over six times the number of residential internal trips and about two-thirds the total number of full-time residential trips.
- Sunday Peak Hour
  - Full-time Residential Internal Trips: 11
  - Full-time Residential Total Trips: 104
  - Commercial/Retail Internal Trips: 86, which is almost eight times the number of residential internal trips and over 80 percent of the total number of full-time residential trips.

Having the number of internal trips associated with the commercial land use far exceed the number of such trips associated with the residential land use is illogical and incorrect. These numbers must match, as they are essentially the same trip (i.e., a trip origin at a residence with a destination at a commercial site, or vice versa). As will be described below, a balancing process must be undertaken to ensure that these numbers match. That process was apparently ignored in the DEIR analysis.

In short, the number of internal trips generated by the commercial space has clearly been grossly overestimated. Consequently, the number of external trips has been substantially underestimated.

The ITE *Trip Generation Handbook* presents detailed guidance with respect to analyzing internal trips at mixed-use developments, such as the West Parcel. The Third Edition (August 2014, p. 45) of that document provides four basic premises that form the basis for evaluating internal capture. One of those is particularly relevant:

> ***Premise 4****: The number of trips from a land use within a mixed-use development to another land use within the same mixed-use development (that is, an internal trip) is a function of the size of the "receiving" land use and the number of trips it attracts, as well as the size of the "originating" land use and the number of trips it sends.* ***The number of trips between a particular pair of internal land uses is limited to the smaller of these two values.*** [Emphasis in the original.]

The document goes on to say (p. 45):

> *Key to the success of this methodology in replicating internal capture patterns at mixed-use sites is its balancing step that constrains internal trip-making to realistic levels given the mix of land uses.*

And further (p. 61):

1. *Estimates for each individual land use are based on the quantity of that land use and its capacity to send or receive internal trips. Without balancing, there is no assurance there is enough capacity on the receiving end to accept as many trips as are being sent.*

2. *The total trips sent internally (that is, internally captured trips) from one use to another must equal the number received at the other end of the trip. Both numbers must be the same.*

The balancing step referred to above is the missing element in the West Parcel trip generation analysis. As a result of the failure to perform this step, the analysis fails to reflect that the internal trip-making capacity of the commercial/retail space vastly exceeds the corresponding capacity of the residential units.

"Volume 1: User's Guide and Handbook" of the ITE *Trip Generation Manual* presents a method for estimating internal trips at multi-use developments, including a set of templates incorporating the balancing procedure referenced above. Attachment B contains copies of those forms, which have been completed using the pertinent information for each of the analysis periods addressed in the West Parcel traffic analysis. Tables 4 and 5 summarize the results of that process for weekdays and Sundays, respectively. (More detailed versions of these tables, in which the residential uses are broken down by type, are presented in Attachment C. Table C-1 addresses weekday conditions, while Table C-2 shows values for Sunday.)

Table 4 shows that, under weekday daily conditions, correctly applying the internal trip estimation process indicates that the total number of internal trips at the West Parcel will be 236, which represents a three percent internal trip rate when combined with the 6,587 external trips. In the weekday PM peak hour, a total of 24 internal trips are expected, which is equivalent to four percent of the total number of 577 project trips.

Table 4
Corrected Project Trip Generation Estimates[1]
Weekday Internal, External and Total Trips

Land Use	Size	Internal Capture	Project Trip Estimate		
			Internal	External	Total
Weekday Daily Conditions					
Full-Time Residential[2]	140 DU[3]	10%	118[4]	1,066	1,184
Part-Time Residential[5]	620 DU	0%	0	2,239	2,239
Commercial/Retail	34,500 SF[6]	80%	118[4]	3,282	3,400
		TOTAL	**236**	**6,587**	**6,823**
Weekday PM Peak-Hour Conditions					
Full-Time Residential[2]	140 DU	10%	12[4]	109	121
Part-Time Residential[5]	620 DU	0%	0	162	162
Commercial/Retail	34,500 SF	80%	12[4]	282	294
		TOTAL	**24**	**553**	**577**

Notes:
1 Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
2 Includes 100 single-family homes and 40 townhomes.
3 Dwelling unit.
4 Note that the internal trip numbers for full-time residential and commercial/retail land uses must match, as they are essentially the same trip and are, therefore, constrained by the smaller value.
5 Includes 400 single-family homes, 160 townhomes, and 60 cabins.
6 Square feet.

Sunday conditions are shown on Table 5. Over the course of a Sunday, the correctly applied internal trip estimation process reveals a total of 212 internal trips out of the total of 3,743 – a six percent internal trip rate. During the Sunday peak hour, 22 internal trips are forecast, which represents five percent of the total of 436 trips.

Table 5
Corrected Project Trip Generation Estimates[1]
Sunday Internal, External and Total Trips

Land Use	Size	Internal Capture	Project Trip Estimate		
			Internal	External	Total
Sunday Daily Conditions					
Full-Time Residential[2]	140 DU[3]	10%	106[4]	950	1,056
Part-Time Residential[5]	620 DU	0%	0	1,817	1,817
Commercial/Retail	34,500 SF[6]	80%	106[4]	764	870
		TOTAL	**212**	**3,531**	**3,743**
Sunday Peak-Hour Conditions					
Full-Time Residential[2]	140 DU	10%	11[4]	93	104
Part-Time Residential[5]	620 DU	0%	0	224	224
Commercial/Retail	34,500 SF	80%	11[4]	97	108
		TOTAL	**22**	**414**	**436**

Notes:
1 Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
2 Includes 100 single-family homes and 40 townhomes.
3 Dwelling unit.
4 Note that the internal trip numbers for full-time residential and commercial/retail land uses must match, as they are essentially the same trip and are, therefore, constrained by the smaller value.
5 Includes 400 single-family homes, 160 townhomes, and 60 cabins.
6 Square feet.

Of particular interest in the traffic impact analysis, of course, are the external trips. Those are the trips that will be added to the study area intersections and road segments and will, therefore, result in the project's impact on the nearby transportation system. Table 6 summarizes a comparison of the faulty external trip estimates employed in the West Parcel DEIR traffic analysis versus the estimates documented in Tables 4 and 5 above, which are based on correctly balancing the internal trips among the on-site land uses. For added perspective, the internal and total trip values are shown, as well as the difference between the DEIR values and the corrected values. Those differences are summarized here:

- Weekday Daily Conditions – The DEIR underestimated external project travel by 2,602 trips (i.e., 65 percent),
- Weekday PM Peak-Hour Conditions – The DEIR underestimated external project travel by 223 trips (i.e., 68 percent),
- Sunday Daily Conditions – The DEIR underestimated external project travel by 590 trips (i.e., 20 percent), and
- Sunday Peak-Hour Conditions – The DEIR underestimated external project travel by 414 trips (i.e., 22 percent).

Table 7 illustrates the effect of assigning these additional external trips to SR 267 in the study area, in accordance with the project trip distribution employed in the traffic analysis. That trip distribution is generally as follows:

- Summer: 65 percent north / 35 percent south, and
- Winter: 70 percent north / 30 percent south.

Table 7 presents the projected traffic volumes, volume/capacity (V/C) ratios, and levels of service for the segments of SR 267 under Placer County's jurisdiction for both Existing Plus Project and Cumulative Plus Project conditions.

Under Existing Plus Project conditions in the summer, the project alone consumes up to 21 percent of the total roadway capacity. Specifically, on the two segments between Northstar Drive and the Project Access Road, the project will cause the V/C ratio to increase from 0.58 (i.e., 58 percent of capacity) to 0.79 (i.e., 79 percent of capacity). In the winter, the project will consume the equivalent of 22 percent of the highway's capacity on those same two segments, increasing the V/C ratio to as high as 0.93 on a typical weekday.

While the project's incremental impact is generally similar under cumulative conditions, the end result is even worse, as SR 267 is projected to operate at or beyond capacity even without the project-generated traffic. In the summer, the highway is expected to have a V/C ratio of 1.20 just south of the Placer County line, representing operation at 20 percent beyond capacity. When the project traffic is added, this will increase to 1.37 – a full 37 percent in excess of capacity. None of the segments of SR 267 will operate below capacity. South of the project access road, SR 267 will be three percent beyond capacity, while to the north of the project, it will range from 13 percent to 37 percent above capacity. Two of the highway segments will be degraded from an "acceptable" LOS E to an unacceptable LOS F.

Table 6
Trip Generation Comparison

Land Use	DEIR Trip Generation Estimate[1]			Corrected Trip Generation Estimate		
	Internal	External	Total	Internal	External	Total
Weekday Daily Conditions						
Full-Time Residential	118	1,066	1,184	118	1,066	1,184
Part-Time Residential	0	2,239	2,239	0	2,239	2,239
Commercial/Retail	**2,720**[2]	**680**	3,400	**118**	**3,282**	3,400
TOTAL	**2,838**	**3,985**	6,823	**236**	**6,587**	6,823
Difference Compared to DEIR				**-2,602**	**+2,602**	0
Weekday PM Peak-Hour Conditions						
Full-Time Residential	12	109	121	12	109	121
Part-Time Residential	0	162	162	0	162	162
Commercial/Retail	**235**	**59**	294	**12**	**282**	294
TOTAL	**247**	**330 165 In/165 Out**	577	**24**	**553 273 In/280 Out**	577
Difference Compared to DEIR				**-223**	**+223 108 In/115 Out**	0
Sunday Daily Conditions						
Full-Time Residential	106	950	1,056	106	950	1,056
Part-Time Residential	0	1,817	1,817	0	1,817	1,817
Commercial/Retail	**696**	**174**	870	**106**	**764**	870
TOTAL	**802**	**2,941**	3,743	**212**	**3,531**	3,743
Difference Compared to DEIR				**-590**	**+590**	0
Sunday Peak-Hour Conditions						
Full-Time Residential	11	93	104	11	93	104
Part-Time Residential	0	224	224	0	224	224
Commercial/Retail	**86**	**22**	108	**11**	**97**	108
TOTAL	**97**	**338 162 In/176 Out**	436	**22**	**414 200 In/214 Out**	436
Difference Compared to DEIR				**-75**	**+76 38 In/38 Out**	0

Notes:
[1] Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
[2] Differences between DEIR and corrected estimates are shown in **bold** font in shaded cells.

Table 7
Corrected Roadway Segment Levels of Service

SR 267 Segment	"No Project" Level of Service Results[1]			Corrected "With Project" Level of Service Results		
	Volume	LOS	V/C[2]	Volume	LOS	V/C
Existing + Project - Summer						
Placer County Line to Schaffer Mill Rd.	15,300	D	0.61	19,421	E	0.78
Schaffer Mill Rd. to Northstar Dr.	14,390	D	0.58	18,591	E	0.74
Northstar Dr. to Highlands View Rd.	12,280	E	0.58	16,521	E	0.79
Highlands View Rd. to Project Access Road	12,240	E	0.58	16,521	E	0.79
Project Access Road to SR 28	12,240	E	0.58	14,546	E	0.69
Existing + Project – Winter						
Placer County Line to Schaffer Mill Rd.	18.970	E	0.76	23,181	E	0.93
Schaffer Mill Rd. to Northstar Dr.	17,920	E	0.72	22,211	E	0.89
Northstar Dr. to Highlands View Rd.	14,860	E	0.71	19,431	E	0.93
Highlands View Rd. to Project Access Road	14,620	E	0.70	19,231	E	0.92
Project Access Road to SR 28	14,620	E	0.70	16,596	E	0.79
Cumulative + Project - Summer						
Placer County Line to Schaffer Mill Rd.	30,080	F	1.20	34,201	F	1.37
Schaffer Mill Rd. to Northstar Dr.	25,290	F	1.01	29,491	F	1.18
Northstar Dr. to Highlands View Rd.	22,420	F	1.07	26,661	F	1.27
Highlands View Rd. to Project Access Road	19,400	E	0.92	**23,681**	**F**	**1.13**
Project Access Road to SR 28	19,400	E	0.92	**21,706**	**F**	**1.03**
Cumulative + Project - Winter						
Placer County Line to Schaffer Mill Rd.	32,810	F	1.31	37,021	F	1.48
Schaffer Mill Rd. to Northstar Dr.	27,240	F	1.09	31,531	F	1.26
Northstar Dr. to Highlands View Rd.	22,090	F	1.05	26,661	F	1.27
Highlands View Rd. to Project Access Road	19,430	E	0.93	**24,041**	**F**	**1.14**
Project Access Road to SR 28	19,430	E	0.93	**20,625**	**F**	**1.02**

Notes:
[1] Reference: DEIR, Table 10-13 – Roadway Segment Levels of Service – Existing Plus Project Conditions (p. 10-23) and DEIR Table 10-19 – Roadway Segment Levels of Service – Cumulative Plus Project Conditions (p. 10-4).
[2] Volume/capacity ratio.

In the winter, the northernmost segment of SR 267 is projected to operate at 148 percent of its capacity under Cumulative Plus Project conditions. Put another way, with the addition of project-generated traffic, it will carry over 37,000 vehicles per day, while its capacity is 25,000 vehicles per day. All five segments will again exceed capacity, and two of the segments will decline from "acceptable" conditions (LOS E) to LOS F (i.e., beyond capacity).

We note that these impacts were identified in the DEIR, but the magnitude of the impacts was substantially understated, so that the public was deprived of information concerning the true impacts of the proposed project.

Further, we note that each of these impacts has been defined as significant and unavoidable, so no mitigation will be implemented (or even attempted) to resolve these major deficiencies. It is inappropriate for the DEIR preparers to, in effect, walk away from these findings without making a greater effort to reduce or eliminate the traffic impacts. Mitigation options certainly exist – reduced project size or greater transit usage, for example.

In any event, the DEIR traffic impact analysis is significantly flawed and must be corrected. The failure to provide an accurate estimate of the volume of traffic associated with the proposed project affects every aspect of the transportation and circulation analysis, as well as analyses of noise, air quality, and greenhouse gases.

FEIR Response to Comment IO41-34, which purports to address this issue, falls woefully short in doing so. The primary focus of the response concerns the assertion that it was not necessary, ". . . to reduce the trips calculated for second homes because the trip rates already account for internalization" and also that, "[n]o further reduction of internal trips for the Second Homes is necessary or warranted." As shown in Tables 4 and 5 above, our calculation of internal and external trips at the proposed project is consistent with this approach – no internal trip reduction has been applied to the 620 part-time residential units.

The FEIR also states that:

> *The 80 percent internalization of commercial trips assumption was derived based on the project description . . .*

The project description provides no direct guidance with respect to internal travel. Clearly, there is no factual basis for this factor. It is essentially a guess that "seemed right" to the analyst, even though no support could be provided for its use.

In conclusion, we repeat that the number of internal trips generated by the commercial space has been grossly overestimated. Consequently, the number of external trips for the project as a whole has been substantially underestimated. In addition to understating the traffic impacts of the proposed project, this major deficiency in the analysis procedures will result in shortcomings in the noise, air quality, and greenhouse gas analyses.

D. Summer vs. Winter Trip Generation

Evidence presented in the DEIR clearly indicates that travel conditions vary substantially on a seasonal basis in the study area. For example, DEIR Table 10-6 (p. 10-9) shows existing traffic volumes for the seven segments of SR 267 evaluated in the Transportation and Circulation analysis. Without exception, the winter volumes are substantially greater than the summer volumes. The winter volumes are typically 20 – 25 percent higher than the summer

volumes, although in one case the winter traffic level is over 90 percent higher. Apparently, the abundant winter recreational activities along SR 267 attract sufficient visitors to result in a significant increase in travel demand during that season.

The data in the ITE *Trip Generation Manual* represents "typical" conditions and, as such, would not reflect the increased level of traffic demand associated with these unique winter conditions. Therefore, while the ITE information is suitable for use in estimating the proposed project's trip generation for typical, summer conditions, it will underestimate the volume of project traffic in the winter, when the large number of part-time/second home owners arrive to ski, snowshoe, etc.

Because of the substantial seasonal variation documented in the DEIR, it is essential that the estimates of project-generated traffic accurately reflect conditions during each of the analysis time periods. In short, separate trip generation estimates are required for summer and winter conditions, so as to reflect the varying levels of activity in the area in those seasons.

FEIR Response to Comment IO41-32 is intended to address this issue, but it contains no information regarding the relationship between summer and winter travel in the study area, which is the point of the comment.

2. ***Failure to Identify Significant Intersection Impact*** – As noted above, the volume of project-generated traffic has been substantially underestimated, primarily due to incorrect adjustments to reflect internal travel at the project, as well as an unrealistic approach to estimating the trip generation for the proposed commercial/retail land uses. To provide an example of the effects of these technical deficiencies, we have performed an analysis of the intersection of SR 267/Project Access Roadway, incorporating corrected project trip generation values for the summer Friday PM peak hour.

   DEIR Table 10-12 (p. 10-27) provides intersection delay and level of service values for Existing Plus Project conditions. The subject intersection of SR 267/Project Access Roadway is shown to have a worst-case delay value of 23 seconds/vehicle and an acceptable level of service of LOS C. This value reflects the proposed design of the intersection, including separate left- and right-turn lanes and acceleration lanes for vehicles exiting the project, as well as deceleration and turn lanes for entering vehicles.

   As described above, when the project trip generation estimate is corrected, the number of external trips will increase, which will increase the project-generated demand on the critical outbound left-turn movement and the other, conflicting movements at the SR 26/Project Access Roadway intersection. The end result will be a delay value that is somewhat greater than 55 seconds/vehicle.

   To determine the specific effect of the additional external trips, we have performed a modified intersection level of service calculation with a corrected set of project trip generation figures. The specific SR 267/Project Access Roadway intersection traffic volumes used in the two calculations are listed below:

	DEIR	Corrected
• Project traffic		
○ Inbound left turn	57	96
○ Inbound right turn	108	177
○ Outbound left turn	108	182
○ Outbound right turn	57	98
• SR 267 through traffic		
○ Southbound	585	585
○ Northbound	438	438

Attachment D contains copies of level of service calculation sheets for both scenarios – with the faulty trip generation values used in the DEIR and with corrected project trip generation numbers. As shown there, calculation for the DEIR trip generation numbers confirms that our analysis is consistent with the DEIR (i.e., the worst case delay value is 22.6 seconds/vehicle, which rounds to 23 seconds/vehicle – LOS C).

For the calculation containing the corrected trip generation values, the critical movement (i.e., the outbound left turn) at the SR 267/Project Access Roadway intersection will have a delay value of 40.4 seconds/vehicle and will operate at an unacceptable LOS E. (For unsignalized intersections on SR 267, the DEIR defines LOS D as the minimum acceptable level of service.)

In summary, this is a significant impact which was not revealed in the DEIR. Consequently, no mitigation measure was identified to remedy the project-related operational deficiency. This is a substantial flaw in the DEIR, which is likely to be found at additional locations when the traffic impact analysis is corrected.

3. ***Incomplete Set of Peak-Hour Traffic Analysis Scenarios*** – The traffic impact analysis addressed conditions in the following peak-hour scenarios:

   - Summer Friday PM Peak Hour, and
   - Winter Sunday PM Peak Hour.

   The choice of the summer Friday PM peak-hour period is based on the following statement (DEIR, p. 10-4):

   > *For this DEIR, the summer condition is represented by a Friday afternoon peak hour in August . . . Friday afternoon conditions typically represent peak conditions resulting from various recreational activities and overnight visitor travel to seasonal residences, rentals, or other lodging accommodations.*

   In contrast, the winter conditions traffic analysis addressed Sunday conditions and, specifically, the supposed "30th highest peak hour of the ski season." The DEIR says (p. 10-4):

   > *Sunday p.m. peak-hour counts were conducted because this is generally the peak travel period during the winter season, especially adjacent to ski resorts.*

Although the DEIR does not specifically say so, these two time periods clearly represent traffic arriving for weekend visits and traffic departing at the end of a recreational weekend. That being the case, it makes sense to analyze both ends of the weekend in both the summer and the winter. All of the same conditions regarding "recreational activities and overnight visitor travel" that are used to justify the summer Friday analyses also apply to a winter Friday. And the peak travel conditions associated with a winter Sunday afternoon also apply to a summer Sunday afternoon.

While the two peak-hour scenarios presented in the DEIR may contribute to a limited understanding of the traffic impacts associated with the proposed project, those impacts will not be fully revealed and understood until analysis scenarios addressing conditions during the summer Sunday PM peak hour and the winter Friday PM peak hour are completed and distributed for public review.

The FEIR provided no response to this comment.

4. ***Failure to Analyze Project Impacts on the Interstate 80 Freeway*** – The DEIR presents a reasonably in-depth analysis of traffic operations on SR 267. However, only limited consideration is given to the potential impacts of the proposed project on Interstate 80 (I-80), which will serve a substantial portion of the project-generated traffic. In fact, according to the DEIR (p. 10-3):

   Interstate 80 (I-80) provides primary regional access to the study area.

   Further, the DEIR (p. 10-22) states that 35 percent of the summer project traffic will use I-80, with 23 percent to and from the west (i.e., to/from Sacramento and the San Francisco Bay Area) and 12 percent to/from the east. In the winter, 39 percent of the project traffic will use I-80, with 25 percent to/from the west and 14 percent to/from the east. FEIR Response to Comment IO41-43 (p. 3.5-445) attempts to diminish the importance of these trips by stating that some of the trips to/from the west are, in fact, local trips to/from Truckee, as though that somehow reduces their impact.

   In contrast to this assumed geographic distribution of project trips, according to travel surveys conducted at Squaw Valley and employed in the recent DEIR for the Village at Squaw Valley project, 51 percent of overnight guests at Squaw Valley are from the San Francisco Bay Area or the Sacramento/Central Valley area. This value, which is based on surveys, is approximately double the assumed amount of I-80 project traffic in the Martis Valley DEIR. Attachment E contains Table 9-15 from the Village at Squaw Valley DEIR, which shows that 13 percent of summer overnight guests at Squaw Valley are from the Sacramento/Central Valley area and 38 percent are from the San Francisco Bay Area. Although the two projects are not identical, they are sufficiently similar that the project trip distribution parameters should not vary substantially, and certainly not by the amount suggested here.

   I-80 Freeway Mainline

   Despite the significant role that I-80 will play in accommodating project traffic, no analysis of the I-80 mainline is provided in the DEIR. FEIR Response to Comment IO41-43 (p. 3.5-445) provides a cursory analysis of the I-80 mainline, even though Caltrans did not request one. According to that response:

   Had a detailed analysis of I-80 been conducted, operations would presumably have been at an unacceptable level given that a peak winter weekend was being studied.

> *Also, the TCCR* [Transportation Corridor Concept Report] *already notes that under cumulative conditions, the freeway would operate unacceptably.*

FEIR Table 3-12 summarizes the volume of project traffic that would be added to I-80, including as many as 84 trips west of SR 267 in the winter Sunday peak hour. The FEIR concludes that this represents a less than significant impact, because it would be equivalent to less than a 0.05 increase in volume/capacity (V/C) ratio.

But the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002) provides a different significance criterion for facilities that operate at unacceptable levels of service under "no project" conditions. Specifically, as shown in Attachment F, that document states:

> *If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE* [Measure of Effectiveness] *should be maintained.*

In this case, the MOE is the V/C ratio and, according to Response to Comment IO41-43, addition of the project traffic would cause that MOE to increase (i.e., become worse) by 0.01 in both peak hour periods, both east and west of SR 267. Since the MOE would not be maintained, a significant impact would occur on the I-80 mainline. Once again, we must note that when the project trip generation estimates are corrected, this impact will be greater.

Freeway Ramps

In our December 2, 2015 letter, we also pointed out that no analysis had been conducted with respect to the I-80 on- and off-ramps at SR 267. Instead, the DEIR traffic analysis evaluated only the ramp merge and diverge areas. (DEIR, p. 10-7, 10-9, and 10-45) These are the specific locations where the on-ramps join and the off-ramps depart from the freeway mainline. No analysis is provided to indicate the project's impacts on the ramps themselves.

FEIR Response to Comment IO41-44 (p. 3.5-445) says:

> *The calculation for the freeway segment Level-of-Service (LOS) for merge and diverge segments involve* [sic] *analysis of traffic volumes versus capacities for both freeway ramp areas and the ramps themselves . . .*

This is simply incorrect. Nothing in the analysis of the ramp merge and diverge areas tells us anything about whether the ramp itself has sufficient capacity to accommodate the traffic demand.

Among the intersections included in the analysis are SR 267/I-80 Westbound Ramps and SR 267/I-80 Eastbound Ramps. DEIR Exhibit 10-6 (p. 10-25) illustrates the "Project-Only" trips. Review of that figure reveals that a total of 74 PM peak-hour project-generated trips were assigned to/from the west on I-80 on a summer Friday. In that same summer Friday PM peak-hour period, 40 project-related trips were assigned to/from the east on I-80. During the winter Sunday peak hour, 84 trips were oriented to/from the west on I-80, while 48 trips traveled to/from the east. These same values are confirmed in FEIR Table 3-12 (p. 3.5-445).

However, as described in detail above, these volumes are substantially understated. As presented in Table 6 above, the DEIR failed to account for 223 Friday PM peak-hour trips and 75 Sunday peak-hour trips. Based on the trip distribution used in the DEIR and the corrected trip generation estimate presented here, an additional 77 PM peak-hour trips would use I-80 in the Friday PM

peak hour, for a total of 191. In the winter Sunday peak hour, an additional 29 project-related vehicles would use I-80, for a total of 161.

Despite the fact that I-80 was projected to carry a substantial portion of the traffic generated by the proposed project, no analysis was conducted to assess potential project-related traffic impacts on the I-80/SR 267 on- or off-ramps or the freeway mainline. Consequently, it is impossible to determine whether the proposed project will adversely impact traffic operations on the freeway or its ramps. To ensure a thorough analysis of potential traffic impacts, it is essential that these analyses be performed.

5. ***Cumulative Conditions Traffic Volume Estimates and Analysis*** – In our December 2, 2015 letter, we pointed out that the traffic volume projections employed in the analysis of cumulative conditions were deficient, in that they represented estimates for the year 2025 rather than the year 2034, as claimed in the DEIR. The FEIR fails to address this issue, other than to say in Response to Comment IO41-52 (p. 3.5-450):

> *The comment states that the Draft EIR underestimates the project's cumulative impacts. As explained in responses to comments IO41-31 through IO41-36, the estimated project trip generation and project impacts are not flawed; therefore, the project does not underestimate the magnitude of project specific impacts under existing or cumulative conditions.*

Obviously, this response fails to address the shortcomings of the cumulative traffic projections in even a cursory fashion. Those shortcomings are detailed below.

The cumulative conditions analysis presented in the DEIR addresses projected traffic operations in the year 2034. However, as described on p. 10-37 of the DEIR, the year 2034 traffic volumes are actually year 2025 traffic volume projections. That is, the Town of Truckee's TransCAD travel demand forecasting model was used to create estimates of traffic in the year 2025 (when the Town of Truckee General Plan is assumed to be built out), ". . . with minimal development expected thereafter." (DEIR, p. 10-37) In effect, zero traffic growth was assumed for nine of the nineteen years included in the cumulative conditions analysis (i.e., from 2025 through 2034).

Even though the year 2025 traffic projections represent buildout of the Truckee General Plan (DEIR, p. 10-37], the approach employed in the analysis fails to reflect traffic increases associated with growth beyond Truckee's boundaries (e.g., in unincorporated Placer or El Dorado County), which would not be reflected in the Town's General Plan land use.

The use of 2025 traffic volume projections is inappropriate unless the analysis is described as being for that year. To suggest that the analysis covers a nineteen-year time period when it actually considers only ten years is misleading. The cumulative conditions analysis must be revised using valid estimates of year 2034 traffic volumes, then recirculated for public review.

Even with these deficient traffic volume forecasts, the DEIR concludes that the project's cumulative transportation impacts would be significant. However, because the DEIR substantially underestimated the magnitude of the project-specific impacts (as described in detail above), it also underestimates the project's cumulative impacts.

6. ***Safety-Related Impacts*** – The DEIR concludes that the project will result in no significant safety-related impacts (DEIR, p. 10-36) and this assertion is repeated in the FEIR (Response to

Comment IO41-50, p. 3.5-449). However, the entire focus of the DEIR safety discussion concerns chain controls on SR 267. Specifically, that document says:

> *Because the project would provide advanced notice of chain requirements and space outside of the Caltrans right-of-way and the main project access road easement for the installation of chains before cars exit the project site, the project would not result in a substantial increase in hazards due to design features or incompatible uses, and this would be a* ***less-than-significant*** *impact.* [Emphasis not added.]

This limited perspective ignores other relevant considerations, however. For example, what is the effect of the project-generated traffic on the ability of emergency vehicles to respond to an incident at or near the project site? Similarly, what will be the effect of the project if an evacuation is needed, in the event of a wildfire, for example? These questions are addressed in greater detail below under "Emergency Vehicle Access."

Furthermore, the safety analysis completely ignores an issue cited at DEIR p. 10-42, "Cumulative Mitigation Measure 10-8f: Pay Placer County fee for future roadway improvements, including the SR 267/Project Access Road intersection." The DEIR states:

> *Although the widening of this intersection plus the installation of a traffic signal or two-lane roundabout would result in acceptable levels of service, Caltrans would not support either signalization or a roundabout because of the steep grade of SR 267 (over 4 percent) at this location and the resulting potential of rear-end collisions, especially in snowy conditions."*

This raises the obvious question: If it is not safe to install a traffic signal or a roundabout, how can it possibly be safe to allow project traffic to enter the highway from a stop sign, with through traffic on SR 267 moving at free-flow speeds of 55 – 60 MPH? Whereas the DEIR expresses concern regarding potential rear-end collisions, vehicles turning onto SR 267 from a stop will be subject to broadside collisions, which are generally more severe than rear-end collisions.

In fact, the introduction of a stop-sign-controlled intersection on a high-speed roadway such as SR 267 is, practically by definition, a significant hazard. The Caltrans *Highway Design Manual* (p. 400-3) specifically states:

> *Intersections have a higher potential for conflict compared to other sections of the highway because travel is interrupted, traffic streams cross, and many types of turning movements occur.*

FEIR Response to Comment IO41-50 (p. 3.5-449) cites the proposed design of the SR 267/Project Access Roadway intersection as proof that the project will not create a new hazard through construction of this intersection. The response points out that the intersection will have separate left- and right-turn lanes for exiting traffic, as well as acceleration lanes on SR 267 in both the northbound and southbound directions, as illustrated on DEIR Exhibit 3.10.

No information is provided with respect to the lengths of the two acceleration lanes. Although no scale is provided on DEIR Exhibit 3-10, it appears that the northbound acceleration lane is approximately 250 feet long. In contrast, the southbound acceleration lane appears to be about 600 feet long. It is unclear why the lengths of these two lanes should be so vastly different, given that they both serve the same role – to allow drivers exiting the site from a stop sign (i.e., zero MPH) to accelerate to a speed at which they can safely merge with traffic moving at 55 - 60 MPH.

We note that the Caltrans *Highway Design Manual* provides no specific guidance with respect to the required length of acceleration lanes. Page 400-6 in Chapter 400 – Intersections At Grade (March 7, 2014) in that document defers to a standard reference published by the American Association of State Highway and Transportation Officials (AASHTO):

> *See AASHTO, A Policy on Geometric Design of Highways and Streets for additional guidance on speed-change lanes.*

"Speed change lanes" is a term that encompasses both acceleration and deceleration lanes. As presented in the AASHTO document (p. 688):

> *A speed-change lane is an auxiliary lane, including tapered areas, primarily for the acceleration or deceleration of vehicles entering or leaving the through-traffic lanes. The terms "speed-change lane," "deceleration lane," or "acceleration lane," as used here, apply broadly to the added pavement joining the traveled way of the highway or street with that of the turning roadway and do not necessarily imply a definite lane of uniform width. A speed-change lane should be of sufficient width and length to enable a driver to maneuver a vehicle into it properly, and once into it, to make the necessary change between the speed of operation on the highway or street and the lower speed on the turning roadway.*

Page 844 of the AASHTO publication adds:

> *Moreover, in the case of an acceleration lane, there should be additional length to permit adjustments in speeds of both through and entering vehicles so that the driver of the entering vehicle can position himself opposite a gap in the through-traffic steam and maneuver into it before reaching the end of the acceleration lane.*

Exhibit 10-70 – Minimum Acceleration Lengths for Entrance Terminals with Flat Grades of Two Percent or Less in the AASHTO document (p. 847) provides guidance concerning the necessary length of these design features. A copy of that exhibit is provided for reference in Attachment G. As shown, vehicles with an initial speed of 0 MPH (i.e., those beginning from a stop) and entering a highway with a design speed of 60 MPH need 1,200 feet to safely enter the highway and, even then, they only achieve a speed of 47 MPH. This is true regardless of whether they are turning left or right.

Even if the design speed on SR 267 were assumed to be 55 MPH (i.e., the speed limit), the required acceleration lane length would be 960 feet, and that would only be sufficient for the vehicle to reach a speed of 43 MPH. Obviously, this is significantly longer than either of the proposed acceleration lanes at the SR 267/Project Access Roadway intersection.

The acceleration lengths referred to here apply to highways that are relatively flat, specifically those with grades of two percent or less. But as the DEIR points out, the grade on SR 267 at the project access location exceeds four percent. AASHTO Exhibit 10-71 (see Attachment G) provides a set of adjustment factors to account for grades on highways. For a 3 - 4 percent upgrade, for example, those factors range from 1.4 to 1.6 for a 60 MPH design speed, depending upon the specific characteristics of the highway. That is, the required acceleration lanes in the uphill direction would be derived by multiplying the "level" lane length by at least 1.4.

In short, the acceleration lanes proposed at the project access intersection are grossly under-designed and will, therefore, create the potential for high speed side-swipe collisions between vehicles exiting the project site and through vehicles on SR 267. This is clearly a significant

impact related to "a substantial increase in hazards due to design features," which is not acknowledged in either the DEIR or the FEIR.

7. ***Emergency Vehicle Access*** – The DEIR contains a cursory discussion of emergency access issues within and near the West Parcel Specific Plan area under the heading "Issues Dismissed from Further Consideration." (DEIR, p. 10-27) This discussion simply acknowledges the locations of two emergency vehicle access roads. However, the project-related impacts on off-site emergency vehicle response are virtually ignored.

   SR 267 is the only roadway by which emergency vehicles could approach or depart the proposed project. What will be the effect on emergency vehicle response time when the entire length of SR 267 between the Placer County line and SR 28 operates at LOS E under Existing Plus Project conditions (DEIR Table 10-13, p. 10-30)? Or when all of the segments of SR 267 between the Town of Truckee and the project access road operate at LOS F, with V/C ratios as high as 1.41 (indicating operation at 41 percent beyond capacity) under Cumulative Plus Project conditions (DEIR Table 10-19, p. 10-44)?

   The DEIR fails to include even a superficial evaluation of the effects of this extreme congestion on emergency vehicle response times. Further, it contains no quantitative analysis with respect to whether adequate capacity exists on SR 267 to accommodate the crush of traffic that will occur during an evacuation, such as during a wildfire. On a "typical" day, the added delays caused by the proposed project's traffic would be inconvenient for residents and first responders. On a day when a wildfire threatens, the effects of the additional traffic could be dire.

   The FEIR completely ignored this issue, so no information has been provided to assure the public that the project will not adversely impact the ability of first responders to meet the needs of the general public, both within and external to the proposed project.

8. ***Deficient Mitigation Measures*** – Our December 2, 2015 letter described a number of deficiencies in the mitigation proposed in the DEIR. Unfortunately, no FEIR response was provided to that comment. As we noted, the DEIR presents a number of mitigation measures aimed at offsetting the significant impacts identified in the Transportation and Circulation section. However, virtually all of the significant impacts to intersections and roadway segments were ultimately deemed "significant and unavoidable" because they would occur on the Caltrans state highway system and, therefore, there is no certainty that any identified mitigation measures would ever be implemented. We have several comments relating to this.

   - With regard to those significant and unavoidable impacts, we believe it bears noting that this finding will ensure the continued presence of substantial traffic congestion in the vicinity of Martis Valley and could even result in the creation of hazardous conditions.

     First, it should be noted that LOS F is defined as a condition under which traffic demand exceeds the capacity of the roadway facility. For traffic signal-controlled intersections, LOS F means that the average driver will be delayed for over 80 seconds. At a stop sign, a driver would be delayed for over 50 seconds. On a segment of roadway, it means stop-and-go operation with delays and the constant threat of a rear-end collision.

     According to the DEIR traffic analysis, three of the eight study intersections will operate at LOS F under Existing Plus Project conditions and six of the eight will do so under Cumulative Plus Project conditions. (These numbers do not reflect the errors in calculation of internal trips, as described above, so they might actually be worse.) Five of seven

roadway segments will be at LOS F under Existing Plus Project conditions, while all seven will operate at LOS F under Cumulative Plus Project conditions.

Because of the failure to provide any form of mitigation for these deficient traffic operations, and no matter how much congestion exists or how long delays might become at the study intersections, traffic operations will continue to be at LOS F, with no hope of improvement.

Operation at LOS F will have safety impacts, as well. For example, intersection delays such as those described above typically result in extensive queues of vehicles waiting to pass through an intersection. Such queues can be a serious impediment to the flow of emergency vehicles. Delays to ambulances or police or fire vehicles can obviously have life or death consequences. This is a particular concern in rural or mountainous areas, such as Martis Valley, where the road system is constrained by topography and few (if any) alternative emergency access routes are available.

In addition, continuation of unacceptable traffic operations in perpetuity, as envisioned by the DEIR, will almost certainly result in adverse impacts in the form of air quality and greenhouse gas emission deficiencies.

Finally, we note once again that simply resorting to a finding of "significant and unavoidable" for these numerous traffic impacts is unacceptable. Consideration must be given to other potential forms of mitigation, including (but not limited to) a reduced project size or greater transit usage, for example.

- Mitigation Measure 10-1a and Mitigation Measure 10-1b: Optimize signal timing at two locations (DEIR, p. 10-28) – Generally speaking, traffic signals in the State of California respond directly to traffic demand, automatically adjusting the amount of time allocated to any particular movement (i.e., left turns, through movements, or right turns). Consequently, a mitigation measure calling for signal optimization might have little or no effect. In fact, the DEIR provides no evidence of the supposed beneficial effect of these proposed mitigation measures in reducing the project-related impact, other than a vague, unsubstantiated statement that the intersection operations would be improved to LOS C.

- Mitigation Measure 10-1c: Provide signage on Highlands View Road to divert traffic to Ridgeline Drive and Northstar Drive (DEIR, p. 10-28) – This mitigation measure represents an attempt to divert drivers from their intended route to an alternate route, in hopes of offsetting a project-related impact. According to the "analysis" of the measure's effectiveness (DEIR, p. 10-28), the alternate route along Ridgeline Drive and Northstar Drive is "likely more attractive" and "0.2 miles less distance" (i.e., shorter) than the primary route along Highlands View Road. It concludes that the impact at SR 267/Highlands View Road would be reduced to less than significant, while maintaining acceptable operations along the recommended route. DEIR Appendix I contains no level of service calculations for mitigated conditions, so it is impossible to verify the claimed beneficial effect of the measure.

  We have several questions about this measure, the most basic of which is, how do we really know it will work? If it's such an attractive route, why are 75 winter peak-hour drivers ignoring it and making a left turn from Highlands View Road onto SR 267? How many vehicles would need to be diverted to reduce the impact to less than significant? How many

were assumed to do so? Is there a meaningful basis for the number of diverted vehicles, or was it simply an arbitrary assumption?

- Mitigation Measure 10-5a: Payment of annual transit fees and Mitigation Measure 10-5b: Join and maintain membership in the Truckee-North Tahoe Transportation Management Association (DEIR, p. 10-33) – These measures are aimed at mitigating the project's transit impacts and, specifically, that:

  > *The proposed project is anticipated to cause existing* [transit] *capacity to be exceeded because the site is located south of Northstar, and additional transit ridership from the project would be added to the peak direction.*

  The DEIR (p. 10.33) also states that:

  > *The proposed project would enhance existing transit service on SR 267 with construction of a new bus shelter within the MVWPSP near SR 267.*

  In fact, this minimal contribution to the local transit infrastructure will serve as no form of enhancement to existing transit service. It will serve only residents of and visitors to the proposed project. Users of the existing transit service will only be inconvenienced by the addition of the bus shelter, as it will add to travel time along the bus route. Although the DEIR states (without basis) that, ". . . any increase in the travel time of the transit route would be modest," no analysis or estimate of the actual delay is provided. Review of the level of service calculation sheets in DEIR Appendix I reveals that simply making the left turn from northbound SR 267 into the project site will add close to a minute to the transit travel time in certain time periods, as follows:

  - Existing + Project – Summer Friday: 55.0 seconds,
  - Existing + Project – Winter Sunday: 32.2 seconds,
  - Cumulative + Project – Summer Friday: 52.6 seconds,
  - Cumulative + Project – Winter Sunday: 62.4 seconds,

  These times ignore the time needed for the bus to turn around (as will be required), allow passengers to board and disembark, and turn back onto SR 267.

  Beyond the faulty evaluation of the transit system "enhancements" proposed by the project, however, is the fact that the proposed mitigation measures will have absolutely no effect with respect to remedying the transit capacity deficiency identified in the DEIR. Only one form of mitigation will be truly effective in this regard: Provide additional transit service, which requires additional and/or larger transit vehicles running more frequently. Neither payment of an annual fee nor joining a transportation management organization will have any effect in this regard.

- Cumulative Impact 10-12: Cumulative impacts to transit (DEIR, p. 10-45) – According to the DEIR, this impact "would not be cumulatively considerable," based on the assumed implementation of Mitigation Measures 10-5a and 5b. However, as described above, those measures will have no effect in either reducing transit demand or providing additional transit capacity. Therefore, this conclusion is in error and an effective mitigation measure must be identified.

9. ***Inadequate Consideration of Construction Impacts*** – Construction-related impacts are addressed on DEIR pp. 10-34 – 10-36. Among the conclusions presented there is the determination that a maximum of 464 daily trips will be generated during any phase of construction. Further, up to 231 AM peak-hour trips will be generated (with 212 such trips during six of the eight construction phases) and up to 174 PM peak-hour trips (with 159 such trips in all but two of the phases). (DEIR Table 10-17, p. 10-35)

   We note that the trips in this table are incorrectly labeled as "trips per employee vehicle." We doubt, for example, that each employee vehicle will make 462 daily trips in Phase 2 of the construction process, or 231 AM peak-hour trips during that same phase. It appears that the intent was to indicate that the trips listed in Table 10-17 are only employee trips; no truck trips are included.

   The construction period trip generation estimates were based, in part, on an assumed employee vehicle occupancy of 1.3 persons per vehicle. (DEIR Table 10-16, Footnote 3, p. 10-34) No information is provided to support this assumed value, which seems high. FEIR Response to Comment IO41-51 (p. 3.5-449) states that this value:

   > *. . . was derived from actual observations conducted during a 2014 summer weekday on Schaffer Mill Road in Truckee. These observations were conducted during the hour between 3:30 PM to 4:30 PM when construction traffic exited the Martis Camp subdivisions.*

   While we are impressed that these observations were "actual," we are not convinced that one hour of such observations constitutes persuasive evidence of the validity of the derived vehicle occupancy factor. Consider, for example, the following information regarding average vehicle occupancy (see Attachment H):

   - For trips to and from work: Average vehicle occupancy = 1.13 (Source: U.S. Department of Transportation, Federal Highway Administration, *Summary of Travel Trends: 2009 National Household Travel Survey*, June 2011.)
   - California average vehicle occupancy: 1.103287 (Source: United States Census 2000, as reported by the Center for Urban Transportation Research, University of South Florida, 2010.)
   - Recommended by Caltrans for economic analyses: 1.15 (Source: Caltrans, *Life-Cycle Benefit-Cost Analysis Economic Parameters 2012)*

   Based on this information, the assumed value of 1.3 persons per vehicle is approximately 15 percent too high. Because construction workers might be unlikely to ride-share, a more reasonable occupancy factor would be 1.15 persons per vehicle, which is the highest of the documented values listed above. In addition, other forms of construction traffic will occur during those peak-hour periods including deliveries of material and equipment, ready-mix trucks, food vendors, inspectors, etc.

   The trip generation estimates are further flawed in that they assume that, over the course of an entire day, only two employee trips will be made per vehicle – one in and one out. This obviously ignores the potential that an employee (including supervisors) will ever leave the job site during the day, returning before the end of the work day, thereby resulting in four daily trips for that individual.

In addition, the DEIR assumption of only one haul load per weekday (and, therefore, two haul trips) seems questionable. Is it really possible to construct over 100 residential units and 34,500 SF of commercial space with only one truck load of material per day?

Table 8 presents a modified set of construction-period trip generation estimates. To be consistent with DEIR Table 10-17, it includes only employee trips and also unrealistically assumes that employees will make only two trips per day. However, it assumes that construction employees will have a more realistic vehicle occupancy of 1.15 persons per vehicle.

Table 8
Modified Construction Trip Generation Estimate[1]

Construction Phase	Construction Employees[3]	Estimated Trip Generation[2]		
		Daily	AM Peak Hour[4]	PM Peak Hour[5]
0	45	78	39	29
1	275	478	239	179
2	300	522	261	196
3	275	478	239	179
4	275	478	239	179
5	275	478	239	179
6	275	478	239	179
7	275	478	239	179

Notes:
[1] Employee trips only.
[2] Based on employee vehicle occupancy of 1.15 persons/vehicle.
[3] Source: DEIR Table 10-16, p. 10-34.
[4] Assumes 100 percent of employees arrive during AM peak hour.
[5] Assumes 75 percent of employees depart during PM peak hour.

Comparing the volume of construction period peak-hour traffic to the project trip generation estimate suggests that a detailed traffic analysis for construction conditions is warranted. Specifically, DEIR Table 10-11 (p. 10-23) shows that 165 project-related outbound trips are estimated for the weekday PM peak hour. This is 31 fewer outbound PM peak-hour trips than could reasonably be expected during Phase 2 of the construction period and 14 fewer than during six other phases, as shown in Table 8.

The AM peak-hour estimates of construction-period trips are over 30 percent higher than the PM peak-hour estimates. Of course, the DEIR traffic impact analysis ignored potential AM peak-hour impacts, so it is not possible to compare the construction estimates to the project estimates, although, once again, the need for a detailed analysis of construction period traffic impact is clearly indicated.

Given the likelihood that peak-hour traffic volumes associated with construction activity will be generally similar to (or even higher than) the volumes associated with the proposed project, it seems reasonable to expect that the impact of those trips on the study area intersections and road segments should be evaluated. Of course, the construction activity will primarily occur on weekdays, when background traffic volumes on the study area road system might be higher than on Sundays. Therefore, the construction traffic analysis should address weekday AM and PM peak hours.

10. ***Inadequate Documentation of Vehicle Miles Traveled (VMT) Estimate*** – Certain of the analyses documented in the DEIR Air Quality (Chapter 11) and Greenhouse Gas Emissions and Climate Change (Chapter 12) sections are based upon information developed in the course of the Transportation and Circulation analysis.

    With regard to the Air Quality analysis, DEIR p. 11-12 states:

    > *Mobile source emissions were estimated using . . . an estimate of project-generated vehicle trips and VMT developed as part of the analysis presented in Chapter 10, "Transportation and Circulation."*

    The Air Quality section also says (DEIR p. 11-18):

    > *Mobile-source emissions of criteria air pollutants and precursors would result from resident and visitor trips, employee commute trips, and other associated vehicle trips (e.g., deliveries of supplies, maintenance vehicles) under the MVWPSP. Table 10-11 in Chapter 10, "Transportation and Circulation," shows the MVWPSP's project trip generation estimates including internal capture reductions. The MVWPSP would generate up to 3,305 daily residential trips and 680 daily commercial and amenity trips . . .*

    Similar references are in DEIR Chapter 12 (p. 12-10), Greenhouse Gas Emissions and Climate Change:

    > *Operational GHG emissions were estimated using . . . estimates of project-generated vehicle trips and total vehicle miles traveled (VMT) that were developed as part of the analysis presented in Chapter 10, "Transportation and Circulation." Development of the projected number of vehicle trips and VMT generated by the project took into account the internalization of trips because of the onsite commercial uses to be developed as part of the project.*

    Careful review of the "Transportation and Circulation" analysis presented in DEIR Chapter 10 reveals virtually no mention of VMT and certainly no documentation of the assumptions and procedures employed in developing any VMT estimates. In fact, a digital search of the chapter reveals only a single reference to VMT or vehicle miles traveled; that reference occurs in the description of the Lake Tahoe Regional Plan and bears no relationship to the specific travel characteristics of the proposed project. Moreover, despite detailed digital searches of all three chapters (Transportation and Circulation, Air Quality, and Greenhouse Gas Emissions and Climate Change), we were unable to find any form of VMT estimate for the proposed project.

    FEIR Master Response 6 is intended to answer the many questions that were raised regarding the treatment of this topic in the DEIR. We must note, once again, that the project's VMT estimate is inaccurate because of the significant deficiencies in the trip generation estimates described above, particularly with respect to internal trips at the proposed project. Correcting those errors will result in higher VMT values.

CONCLUSION

Our review of the Final Environmental Impact Report for the proposed Martis Valley West Parcel Specific Plan revealed a number of outstanding issues affecting the validity of the conclusions and recommendations presented in the environmental documentation for the proposed project. Of greatest concern are the gross errors in the project trip generation estimates resulting from

misapplication of internal trip adjustment factors. Those errors affect not only the validity of the traffic impact analysis, but also the air quality, noise, and greenhouse gas emissions analyses. These issues and the others described above must be addressed prior to approval by Placer County of the proposed project and the related environmental documentation.

We hope this information is useful. If you have questions concerning any of the items presented here or would like to discuss them further, please feel free to contact me at (916) 783-3838.

Sincerely,

MRO ENGINEERS, INC.

Neal K. Liddicoat, P.E.
Traffic Engineering Manager

ATTACHMENT A

DEIR Project Trip Generation Estimates
Internal, External and Total Trips

Table A-1 DEIR Project Trip Generation Estimates[1] Weekday Internal, External and Total Trips						
Land Use		Size	Internal Capture	Project Trip Estimate		
				Internal	External	Total
Weekday Daily Conditions						
Full-Time Residential	Single-Family Homes	100 DU[2]	10%	95	857	952
	Townhomes	40 DU		23	209	232
			Subtotal	***118***	***1,066***	***1,184***
Part-Time Residential	Single-Family Homes	400 DU	0%	0	1,444	1,444
	Townhomes	160 DU		0	578	578
	Cabins	60 DU		0	217	217
			Subtotal	***0***	***2,239***	***2,239***
Commercial/Retail		34,500 SF[3]	80%	***2,720***	***680***	***3,400***
			TOTAL	**2,838**	**3,985**	**6,823**
Weekday PM Peak-Hour Conditions						
Full-Time Residential	Single-Family Homes	100 DU	10%	10	90	100
	Townhomes	40 DU		2	19	21
			Subtotal	**12**	**109**	**121**
Part-Time Residential	Single-Family Homes	400 DU	0%	0	104	104
	Townhomes	160 DU		0	42	42
	Cabins	60 DU		0	16	16
			Subtotal	**0**	**162**	**162**
Commercial/Retail		34,500 SF	80%	***235***	***59***	***294***
			TOTAL	**247**	**330**	**577**

Notes:
1 Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
2 Dwelling unit.
3 Square feet.

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Table A-2
DEIR Project Trip Generation Estimates[1]
Sunday Internal, External and Total Trips

Land Use		Size	Internal Capture	Project Trip Estimate		
				Internal	External	Total
Sunday Daily Conditions						
Full-Time Residential	Single-Family Homes	100 DU[2]	10%	86	776	862
	Townhomes	40 DU		20	174	194
			Subtotal	***106***	***950***	***1,056***
Part-Time Residential	Single-Family Homes	400 DU	0%	0	1,172	1,172
	Townhomes	160 DU		0	469	469
	Cabins	60 DU		0	176	176
			Subtotal	***0***	***1,817***	***1,817***
Commercial/Retail		34,500 SF[3]	80%	***696***	***174***	***870***
			TOTAL	**802**	**2,941**	**3,743**
Sunday Peak-Hour Conditions						
Full-Time Residential	Single-Family Homes	100 DU	10%	9	77	86
	Townhomes	40 DU		2	16	18
			Subtotal	***11***	***93***	***104***
Part-Time Residential	Single-Family Homes	400 DU	0%	0	144	144
	Townhomes	160 DU		0	58	58
	Cabins	60 DU		0	22	22
			Subtotal	***0***	***224***	***224***
Commercial/Retail		34,500 SF	80%	***86***	***22***	***108***
			TOTAL	**97**	**339**	**436**

Notes:
[1] Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
[2] Dwelling unit.
[3] Square feet.

ATTACHMENT B

Internal Trip Capture Calculations

ATTACHMENT C

Corrected Project Trip Generation Estimates
Internal, External and Total Trips

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Table C-1
Corrected Project Trip Generation Estimates[1]
Weekday Internal, External and Total Trips

Land Use		Size	Internal Capture	Project Trip Estimate		
				Internal	External	Total
Weekday Daily Conditions						
Full-Time Residential	Single-Family Homes	140 DU[2]	10%	95	857	952
	Townhomes	40 DU		23	209	232
			Subtotal	***118***	***1,066***	***1,184***
Part-Time Residential	Single-Family Homes	400 DU	0%	0	1,444	1,444
	Townhomes	160 DU		0	578	578
	Cabins	60 DU		0	217	217
			Subtotal	***0***	***2,239***	***2,239***
Commercial/Retail		34,500 SF[3]	80%	***118***	***3,282***	***3,400***
			TOTAL	**236**	**6,587**	**6,823**
Weekday PM Peak-Hour Conditions						
Full-Time Residential	Single-Family Homes	100 DU	10%	10	90	100
	Townhomes	40 DU		2	19	21
			Subtotal	**12**	**109**	**121**
Part-Time Residential	Single-Family Homes	400 DU	0%	0	104	104
	Townhomes	160 DU		0	42	42
	Cabins	60 DU		0	16	16
			Subtotal	**0**	**162**	**162**
Commercial/Retail		34,500 SF	80%	***12***	***282***	***294***
			TOTAL	**24**	**553**	**577**

Notes:
[1] Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
[2] Dwelling unit.
[3] Square feet.

Table C-2 Corrected Project Trip Generation Estimates[1] Sunday Internal, External and Total Trips						
Land Use		Size	Internal Capture	Project Trip Estimate		
				Internal	External	Total
Sunday Daily Conditions						
Full-Time Residential	Single-Family Homes	100 DU[2]	10%	86	776	862
	Townhomes	40 DU		20	174	194
			Subtotal	***106***	***950***	***1,056***
Part-Time Residential	Single-Family Homes	400 DU	0%	0	1,172	1,172
	Townhomes	160 DU		0	469	469
	Cabins	60 DU		0	176	176
			Subtotal	***0***	***1,817***	***1,817***
Commercial/Retail		34,500 SF[3]	80%	***106***	***764***	***870***
			TOTAL	**212**	**3,531**	**3,743**
Sunday Peak-Hour Conditions						
Full-Time Residential	Single-Family Homes	100 DU	10%	9	77	86
	Townhomes	40 DU		2	16	18
			Subtotal	***11***	***93***	***104***
Part-Time Residential	Single-Family Homes	400 DU	0%	0	144	144
	Townhomes	160 DU		0	58	58
	Cabins	60 DU		0	22	22
			Subtotal	***0***	***224***	***224***
Commercial/Retail		34,500 SF	80%	***11***	***97***	***108***
			TOTAL	**22**	**414**	**436**

Notes:
1 Reference: DEIR, Table 10-11 – Project Trip Generation, p. 10-23.
2 Dwelling unit.
3 Square feet.

ATTACHMENT D

Level of Service Calculations
State Route 267/Project Access Roadway
Existing + Project – Summer PM Peak Hour

ATTACHMENT E

Table 9-15 – Travel Characteristics of Summer Overnight Guests
(Source: Placer County, *Draft Environmental Impact Report – Village at Squaw Valley Specific Plan*, May 2015)

ATTACHMENT F

Excerpt from *Guide for the Preparation of Traffic Impact Studies*
(Caltrans, December 2002)

ATTACHMENT G

Exhibit 10-70 – Minimum Acceleration Lengths for Entrance Terminals with Flat Grades of Two Percent or Less
&
Exhibit 10-71 – Speed Change lane Adjustment Factors as a Function of Grade

(Source: American Association of State Highway & Transportation Officials, *A Policy on Geometric Design of Highways and Streets*, 2004)

ATTACHMENT H

Average Vehicle Occupancy Data
(Various Sources)

728797.2