

November 21, 2011

Aetna Preserve LLC
1136-D Oak Avenue
St. Helena, California 94574

Subject: Supplemental Traffic Analysis for the Aetna Springs Retreat Project

Dear Mr. Javanbakht

LSA Associates, Inc. (LSA) is pleased to provide this supplemental traffic analysis for the Aetna Springs Retreat Project. As you know, LSA prepared a Traffic Impact Analysis (TIA) for the proposed project in October 2011. Based on recent discussions with Napa County (County) staff, a 2030 General Plan (GP) build-out analysis is requested. A cumulative analysis was not provided in the October 2011 TIA.

The purpose of this supplemental traffic analysis is to determine the cumulative 2030 effects on the circulation system with implementation of the Aetna Springs Retreat. LSA reviewed the Napa County GP Environmental Impact Report Technical Memorandum for Traffic and Circulation Supporting the Findings and Recommendations (GP Tech Memo), prepared by Dowling Associates, Inc. (Dowling) in February 2007, for establishing the 2030 conditions without Aetna Springs Retreat. The approved land use alternative for the County GP is Alternative A.

STUDY AREA

Figure 1 (Attachment A) shows the regional Aetna Springs Retreat project location and the study area intersections analyzed in the TIA.

The following roadway segments in the vicinity of the proposed project were analyzed as part of the GP Tech Memo:

- **Chiles Pope Valley Road (between Pope Canyon Road and Lower Chiles Valley Road).** Chiles Pope Valley Road is located southeast of the project site. It is classified as a rural arterial in the County's GP Circulation Element. Chiles Pope Valley Road is a two-lane undivided north-south roadway located south of Chiles Pope Valley Road/Pope Valley Creek Road (i.e., study area intersection #4 in the TIA).
- **Howell Mountain Road (between Pope Valley Road and North White Cottage Road).** Howell Mountain Road is located south of the project site. This north-south roadway is classified as a collector street in the County's GP Circulation Element. Howell Mountain Road is a two-lane undivided roadway located south of Howell Mountain Road/Pope Valley Road (i.e., study area intersection #1 in the TIA).

While these roadway segments were not included in the study area for the Aetna Springs Retreat project, this supplemental analysis identifies potential impacts of trips generated from the project and these roadways (beyond the study area).

METHODOLOGY

Roadway Segment Level of Service Methodology

The GP Tech Memo utilized the Highway Capacity Manual (HCM) 2000 methodology to determine the peak-hour level of service (LOS) at County roadway segments. According to the County's GP Circulation Element, LOS D is considered the upper limit of satisfactory conditions. The relationship of roadway class, capacity, volume-to-capacity (V/C) ratio, and LOS is summarized below.

Class	LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Rural Arterial						
Capacity per lane	72	120	590	740	800	> 800
V/C	0.09	0.15	0.74	0.93	1.00	> 1.00
Collector Street						
Capacity per lane	73	97	480	760	810	> 810
V/C	0.09	0.12	0.59	0.94	1.00	> 1.00

2030 CONDITIONS

2030 Roadway Segment LOS Analysis

2030 Without GP Improvements peak-hour v/c ratios and LOS were obtained from the GP Tech Memo. These v/c ratios and LOS are provided as Attachment B. It should be noted that the peak-hour volumes associated with the v/c ratios were not provided. In order to estimate the peak-hour directional volumes along the Chiles Pope Valley Road (i.e., Rural Arterial with an 800-vehicle capacity per lane) and Howell Mountain Road (i.e., Collector Street with an 810-vehicle capacity per lane) segments, the v/c ratio was multiplied by the directional capacity.

Table A summarizes the results of the 2030 Without GP Improvements peak-hour LOS analysis for the study area roadway segments. For purposes of this analysis, the worst-case p.m. peak hour was evaluated. As this table indicates, all study area roadway segments in the vicinity of the Aetna Springs Retreat are forecast to operate at an acceptable LOS (D or better).

Table A: 2030 Roadway Segment Level of Service Summary

Roadway Segment		Lanes	Directional Capacity	PM Volume	V/C	LOS
2030 Network Without GP Improvements						
NB	Chiles Pope Valley Road	1	800	280	0.35	C
SB	Chiles Pope Valley Road	1	800	72	0.09	A
NB	Howell Mountain Road	1	810	203	0.25	C
SB	Howell Mountain Road	1	810	203	0.25	C

PROJECT TRAFFIC

It is not clear whether the GP land uses analyzed in the Traffic Tech Memo included the land use for the proposed Aetna Springs Retreat. Renovation of the project was identified in the GP. Furthermore, the Aetna Springs Retreat has an existing use permit. As such, it is possible that the project was included in the GP land use and supporting traffic analysis. However, to present a conservative estimate, traffic generated by the proposed project was added to the GP land uses.

According to the October 2011 TIA, the proposed Aetna Springs Retreat would accommodate 200 overnight guests. The project is forecast to generate 65 p.m. peak-hour trips (28 inbound and 37 outbound). The project trips were distributed to the surrounding roadways based on the location of the project in relation to local and regional transportation facilities. The project trip distribution was discussed with County Public Works staff and applied to the trip generation to arrive at the project trip assignment.

Approximately 15 percent of the Aetna Springs Retreat trips are destined to the north (via Butts Canyon Road) and 85 are destined to the south (35 percent via Chiles Pope Valley Road and 50 percent via Howell Mountain Road). As stated previously, Chiles Pope Valley Road and Howell Mountain Road are the only roadways analyzed in the GP Tech Memo that are in the vicinity of the Aetna Springs Retreat. Butts Canyon Road is not included in the GP Tech Memo study area.

Therefore, for purposes of this supplemental analysis, approximately 23 peak-hour vehicles (10 northbound/inbound and 13 southbound/outbound) would be added to Chiles Pope Valley Road, and 33 peak-hour vehicles (14 northbound/inbound and 19 southbound/outbound) would be added to Howell Mountain Road. It should be noted that the Aetna Springs Retreat project would not significantly increase the traffic volumes on any other County roadway.

2030 PLUS PROJECT CONDITIONS

2030 Plus Project Roadway Segment LOS Analysis

The project trip generation was added to the Chiles Pope Valley Road and Howell Mountain Road traffic volumes for 2030 Network Without GP Improvements. Table B summarizes the results of the 2030 Without GP Improvements Plus Project peak-hour LOS analysis for the study area roadway segments. The worst-case p.m. peak-hour conditions were analyzed. As this table indicates, all study area roadway segments in the vicinity of the Aetna Springs Retreat are forecast to operate at an acceptable LOS (D or better) under these cumulative conditions.

Table B: 2030 Plus Project Roadway Segment Level of Service Summary

Roadway Segment		Lanes	Directional Capacity	PM Volume	V/C	LOS
2030 Network Without GP Improvements Plus Project						
NB	Chiles Pope Valley Road	1	800	290	0.36	C
SB	Chiles Pope Valley Road	1	800	85	0.11	B
NB	Howell Mountain Road	1	810	217	0.27	C
SB	Howell Mountain Road	1	810	222	0.27	C

CONCLUSION

Based on the results of this supplemental analysis, the Aetna Springs Retreat project can be accommodated without causing a significant circulation impact under cumulative 2030 conditions. Evaluation of the roadway segment LOS shows that the addition of project traffic to the 2030 Network Without GP Improvements traffic volumes will not cause a significant increase in v/c ratio and will not cause the LOS to deteriorate from satisfactory to unsatisfactory, according to the County's performance criteria. As a result, no mitigation measures are required. The project would not contribute to any future County roadway deficiencies.

If you have any questions, please call me at (949) 553-0666.

Sincerely,

LSA ASSOCIATES, INC.

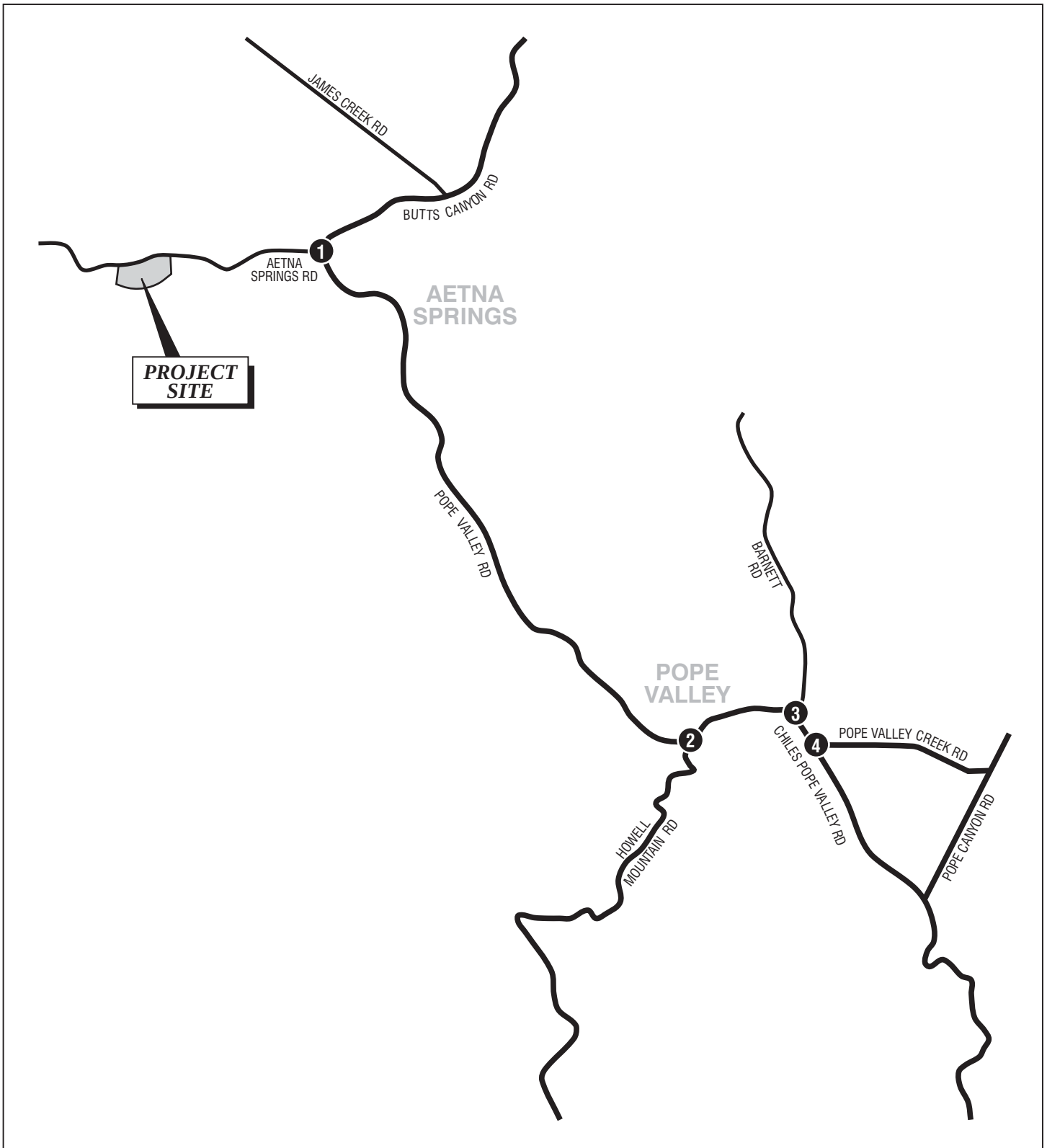
Pritam Deshmukh, P.E., T.E.
Senior Transportation Engineer

Attachments: A – Figure 1
B – 2030 V/C Ratios and LOS



ATTACHMENT A

FIGURE 1



L S A

LEGEND

- ④ Study Area Intersection

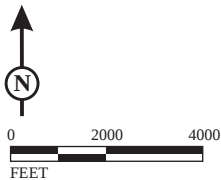


FIGURE 1

Aetna Springs Retreat
 Project Location and
 Study Area Intersections

ATTACHMENT B

2030 V/C RATIOS AND LOS

Table 19 - Peak Hour - V/C Ratios and LOS - 2030 Network Without GP Improvements

Segment Number	Direction A/B or B-A	Segment Descriptions		Peak Hour V/C Ratio			Level Of Service		
				Existing PM	2030A PM	2030B PM	Existing PM	2030A PM	2030B PM
1	NB/EB	AMERICAN CANYON ROAD	I-80	0.80	1.48	1.48	1.46 LOS D	LOS F	LOS F
2	SB/WB	AMERICAN CANYON ROAD	I-80	0.80	1.32	1.30	1.39 LOS D	LOS F	LOS F
3	NB/EB	CHILES POPE VALLEY RD	Pope Canyon Road	0.08	0.35	0.32	0.20 LOS A	LOS C	LOS C
4	SB/WB	CHILES POPE VALLEY RD	Pope Canyon Road	0.08	0.08	0.08	0.09 LOS A	LOS B	LOS B
5	NB/EB	DEER PARK RD	Sanitarium Rd (North)	0.51	0.96	1.01	1.11 LOS C	LOS E	LOS F
6	SB/WB	DEER PARK RD	Sanitarium Rd (North)	0.42	0.64	0.67	0.59 LOS C	LOS D	LOS D
7	NB/EB	DEER PARK ROAD	Silverado Trail	0.35	1.03	0.93	0.86 LOS C	LOS F	LOS D
8	SB/WB	DEER PARK ROAD	Silverado Trail	0.26	0.63	0.63	0.37 LOS C	LOS D	LOS D
9	NB/EB	FLOSDEN ROAD	American Canyon Road	0.35	0.96	0.93	1.06 LOS C	LOS E	LOS F
10	SB/WB	FLOSDEN ROAD	American Canyon Road	0.29	0.82	0.78	0.79 LOS C	LOS D	LOS D
11	NB/EB	HOWELL MOUNTAIN RD	Pope Valley Rd	0.07	0.25	0.27	0.28 LOS A	LOS C	LOS C
12	SB/WB	HOWELL MOUNTAIN RD	Pope Valley Rd	0.06	0.25	0.27	0.19 LOS A	LOS C	LOS C
13	NB/EB	NAPA VALLEJO HWY	Kaiser Rd	0.91	2.34	2.36	2.64 LOS D	LOS F	LOS F
14	SB/WB	NAPA VALLEJO HWY	Kaiser Rd	0.78	1.25	1.26	1.36 LOS D	LOS F	LOS F
15	NB/EB	OAK KNOLL AVE	Big Ranch Rd	0.18	0.16	0.18	0.18 LOS C	LOS C	LOS C
16	SB/WB	OAK KNOLL AVE	Big Ranch Rd	0.22	0.22	0.22	0.22 LOS C	LOS C	LOS C
17	NB/EB	OAKVILLE CROSS RD	Napa River	0.08	0.13	0.11	0.12 LOS A	LOS B	LOS C
18	SB/WB	OAKVILLE CROSS RD	Napa River	0.09	0.23	0.20	0.20 LOS B	LOS C	LOS C
19	NB/EB	OLD SONOMA ROAD	Buhman Avenue	0.22	0.28	0.30	0.31 LOS C	LOS C	LOS C
20	SB/WB	OLD SONOMA ROAD	Buhman Avenue	0.11	0.13	0.14	0.13 LOS B	LOS C	LOS C
21	NB/EB	PETRIIFIED FOREST ROAD	Foothill Boulevard (SR 128)	0.68	1.35	1.36	1.40 LOS C	LOS F	LOS F
22	SB/WB	PETRIIFIED FOREST ROAD	Foothill Boulevard (SR 128)	0.65	1.34	1.32	1.26 LOS C	LOS F	LOS F
23	NB/EB	POPE CANYON RD	Berryessa-Knoxville Rd	0.04	0.16	0.22	0.23 LOS A	LOS C	LOS C
24	SB/WB	POPE CANYON RD	Berryessa-Knoxville Rd	0.04	0.09	0.10	0.11 LOS A	LOS B	LOS B
25	NB/EB	SILVERADO TRL	Oak Knoll Ave	0.40	0.96	0.97	1.01 LOS C	LOS E	LOS F
26	SB/WB	SILVERADO TRL	Oak Knoll Ave	0.61	0.75	0.73	0.86 LOS C	LOS D	LOS D
27	NB/EB	SILVERADO TRL	Sage Canyon Rd (SR 128)	0.45	0.97	0.94	1.00 LOS C	LOS E	LOS F
28	SB/WB	SILVERADO TRL	Sage Canyon Rd (SR 128)	0.58	0.77	0.77	0.91 LOS C	LOS D	LOS D
29	NB/EB	SILVERADO TRL	Pope St	0.31	0.86	0.84	0.86 LOS C	LOS D	LOS D
30	SB/WB	SILVERADO TRL	Pope St	0.46	1.02	1.02	1.01 LOS C	LOS F	LOS F
31	NB/EB	SILVERADO TRL	Bale Ln	0.19	0.48	0.46	0.55 LOS C	LOS C	LOS C
32	SB/WB	SILVERADO TRL	Bale Ln	0.28	0.65	0.67	0.72 LOS C	LOS C	LOS C
33	NB/EB	SILVERADO TRL	Callistoga City Limits	0.39	0.95	0.97	1.03 LOS C	LOS E	LOS F
34	SB/WB	SILVERADO TRL	Callistoga City Limits	0.29	0.85	0.53	0.58 LOS C	LOS C	LOS C
35	NB/EB	SOSCOL AVE	First St	0.87	1.03	1.00	0.91 LOS D	LOS F	LOS D
36	SB/WB	SOSCOL AVE	First St	0.87	0.84	0.98	1.06 LOS D	LOS E	LOS F
37	NB/EB	SPRING MOUNTAIN ROAD	St. Helena City Limit	0.05	0.66	0.69	0.84 LOS A	LOS C	LOS D
38	SB/WB	SPRING MOUNTAIN ROAD	St. Helena City Limit	0.05	0.81	0.82	0.78 LOS A	LOS D	LOS D
39	NB/EB	STATE ROUTE 12/121	Cuttings Wharf Road	0.79	0.98	0.97	1.02 LOS D	LOS E	LOS F
40	SB/WB	STATE ROUTE 12/121	Cuttings Wharf Road	1.47	2.05	2.06	2.06 LOS F	LOS F	LOS F
41	NB/EB	STATE ROUTE 12	Kelly Road	1.17	1.09	1.11	1.08 LOS F	LOS F	LOS F
42	SB/WB	STATE ROUTE 12	Lynch Road	0.75	0.97	0.97	1.03 LOS C	LOS E	LOS F
43	NB/EB	STATE ROUTE 121	Wooden Valley Rd	0.40	1.12	1.08	1.04 LOS C	LOS F	LOS F
44	SB/WB	STATE ROUTE 121	Wooden Valley Rd	0.16	0.82	0.82	0.87 LOS C	LOS D	LOS D
45	NB/EB	STATE ROUTE 121	Circle Oaks Dr	0.10	0.60	0.65	0.57 LOS B	LOS C	LOS C
46	SB/WB	STATE ROUTE 121	Circle Oaks Dr	0.23	0.45	0.49	0.50 LOS C	LOS C	LOS C