Stantec Consulting Services Inc.
111 East Victoria Street, Santa Barbara CA 93101-2018

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File: 2064107000

Erik Vasquez
PetroRock, LLC
4700 Stockdale Highway, Suite 120
Bakersfield, CA. 93309

Subject: **Traffic Study for the United California, California and Bradley ("UCCB") Energy Project, Orcutt, CA**

Dear Mr. Vasquez,

Stantec has prepared the following traffic study for subject project to determine the potential for traffic impacts on area roadways and intersections.

PROJECT DESCRIPTION

The United California, California and Bradley ("UCCB") Energy Project consists of the redevelopment of previously active oil properties in the Cat Canyon Oil Field in Northern Santa Barbara County. The project location is illustrated in the attached Exhibit 1. The project proposes 231 new oil wells located on 28 drilling pads, a centralized tank battery, pipelines and ancillary equipment. The entirety of the project is located on existing drill pads or currently disturbed ground, and will use existing public or private roads for operations and transportation. The project site is approximately 700 gross acres, but the project development footprint is limited to approximately 25 acres. Current uses on the property include existing oil pads, cattle grazing and vineyards. Uses on adjacent properties to the North, South, East and West are active oilfields (operated by Greka and ERG), cattle grazing and vineyard operations.

Each well will be equipped with a pumping unit and produced fluids will be delivered from the wells via pipeline to a centralized Tank Battery for separation and storage. It is expected the project could produce up to 4,000 barrels of native oil per day at peak production. Produced oil will be transported offsite via tanker truck or the recently approved ERG Pipeline Project to a refinery.

Site development is minimal due to reuse of previous sites. The project is expected to be developed over a fifteen year period, with operations continuing until the resource is not capable of economically producing or operations are deemed undesirable.

The project location is illustrated in the attached Exhibit 1. Access to the property is provided via existing driveways located on Orcutt-Garey Road to the north and Dominion Road to the south. The primary route for heavy vehicles (light crude import and crude export, rig equipment hauling and deliveries) is Dominion Road to Betteravia Road to the pump station and U.S. 101. Remaining project generated traffic consisting of passenger vehicles and light trucks will use both Betteravia Road and Clark Avenue to access the project area.

EXISTING CONDITIONS

Existing Street Network

U.S. Highway 101 (U.S. 101) extends along the Pacific Coast between Los Angeles and San Francisco. Within Santa Barbara County, this four to six-lane highway provides the principal route between Santa Maria and the cities of Buellton, Goleta and Santa Barbara to the south, and the cities of Santa Maria and San Luis Obispo to the north. Access between U.S. Highway 101 and the project site is provided via the interchanges at Clark Avenue and Betteravia Road.

Betteravia Road is an east-west two-lane arterial roadway that provides access between the U.S. 101 and the City of Santa Maria, and Foxen Canyon Road and Dominion Road and the Phillips 66 Pipeline Pump Station. The roadways carries has a maximum average daily traffic volume of approximately 6,800 vehicles per day.

Clark Avenue is an east-west arterial roadway that extends through the Orcutt area from Dominion Road east of U.S. Highway 101 to State Route 1 to the west. The segment east of U.S. 101 contains two travel lanes. Clark Avenue is designated as a Primary 2 roadway with an average daily traffic volume of 5,250 vehicles per day.

Dominion Road is generally a north-south two-lane rural road that extends south of Foxen Canyon Road until it terminates at Palmer Road. The roadway carries an average daily traffic volume of between 830 and 1,400 vehicles adjacent to the project area.

Foxen Canyon Road is a north-south two-lane rural road that connects the communities of Los Olivos, Sisquoc and Garey. The roadway transitions into Betteravia Road just east of Santa Maria. This portion of Foxen Canyon Road carries an average daily traffic volume of approximately 1,200 vehicles per day.

Existing Roadway and Intersection Operations

Level of Service Criteria. A level of service (LOS) ranking scale is used to identify the operating conditions on roadways and intersections. This scale compares traffic volumes to roadway segment or intersection capacity and assigns a letter value to this relationship. The letter scale ranges from A to F with LOS A representing free flow conditions and LOS F representing congested conditions. The level of service criteria is summarized in Table 1. The County's acceptable standard is LOS C.

Roadways. Levels of service for the roadways within the study area are based on the County's engineering design capacities for roadways. A table discussing the roadway definitions and capacities is attached to this report.

Table 1
Intersection Level of Service Criteria

LOS	Signalized intersections (V/C Ratio)	Unsignalized intersections (sec. of delay)	Definition
A	< 0.60	≤ 10	Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
B	0.61 – 0.70	> 10 and ≤ 15	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
C	0.71- 0.80	> 15 and ≤ 25	Conditions of stable flow, delays are low to moderate, full use of peak direction signal phases is experienced.
D	0.81 – 0.90	> 25 and ≤ 35	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	0.91 – 1.00	> 35 and ≤ 50	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	> 1.00	> 50	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal

Source: Highway Capacity Manual, 2010 Edition

Existing Levels of Service. Stantec collected average daily traffic (ADT) volumes on the critical roadway segments in the study area on Thursday April 2, 2015. Clark Avenue east of U.S. 101 carries 5,250 ADT, and Dominion Road carries 1,400 ADT north of Clark Avenue and 830 ADT south of Clark Avenue. Based on peak hour counts collected in 2014 (Traffic Study for the North Garey Oil and Gas Production Plan, Penfield & Smith, February 2014), Orcutt-Garey Road carries less than 1,000 ADT. The study-area roadway's ADT volumes equate to LOS A operations.

All intersections in the study area are unsignalized. The intersections of Clark Avenue with Telephone Road and Dominion Road intersection and the Orcutt-Garey Road/Dominion Road intersection operate in LOS A range. The U.S. 101/Clark Avenue Interchange operates in the LOS C range. The level of service grades are acceptable based on the County's and Caltrans LOS C standards.

Impact Thresholds

Santa Barbara County. The Santa Barbara County impact thresholds were used to assess the significance of the potential traffic and parking impacts generated by the project. These thresholds are outlined in the following text.

A. If the addition of project traffic to an intersection increases the volume-to-capacity (V/C) ratio by the values provided in the following table, the impact is considered significant.

Santa Barbara County Intersection Thresholds

Significant Changes in Levels of Service	
Intersection Level of Service (Including Project)	Increase in V/C or Trips Greater Than
LOS A	0.20
LOS B	0.15
LOS C	0.10
LOS D	15 Trips
LOS E	10 Trips
LOS F	5 Trips

B. The project's access to a major road or arterial road would require access that would create an unsafe situation, a new traffic signal or major revisions to an existing traffic signal.

C. The project adds traffic to a roadway that has design features (e.g., narrow width, road-side ditches, sharp curves, poor sight distance, inadequate pavement structure) that would become a potential safety problem with the addition of project traffic.

D. Project traffic would utilize a substantial portion of an intersection's capacity where the intersection is currently operating at acceptable levels of service but with cumulative traffic would degrade to or approach LOS D (V/C 0.80) or lower. Substantial is defined as a minimum change of 0.03 for an intersection which would operate from 0.80 to 0.85, a change of 0.02 for an intersection which would operate from 0.86 to 0.90 and a change of 0.01 for an intersection which would operate greater than 0.90.

Caltrans. Caltrans has established the cusp of the LOS C/D range as the target level of service standard for State Highway intersections. If an existing State Highway facility is operating at less than the target LOS, the existing Measure of Effectiveness (MOE) should be maintained.

PROJECT-SPECIFIC ANALYSIS

Project Trip Generation

Trip generation estimates were developed using project data provided by the applicant. The project consists of a development phase and an operational/production phase. Most development activities are expected to be completed in the first three years, except drilling rig activities, which is expected to last up to 15 years. The operational/production phase will commence in the second years and will continue through the life of the project. Table 2 summarizes the project components.

Table 3 shows the trip generation estimates for each year. The estimates assume that deliveries, light crude import and crude export would occur throughout the workday. To provide for a conservative estimate, all other components are assumed to generate commute trips during the AM, Noon, and PM peak hours. The estimates also assume that produced oil will be transported offsite via tanker truck to a refinery, not via pipeline. A detailed trip generation worksheet is provided as attachment.

Table 2
Project Statistics

DEVELOPMENT					
Component	**# of Vehicles**	**Primary Route**	**Vehicle Type**	**Project Years**	**# of Days/Year**
Rig Crew	6	Betteravia Rd	Heavy/light Truck	Years 1-15	183
Roustabouts	6	Better. Rd/Clark Ave	Light Truck	Years 1-3	251
Electricians	4	Better. Rd/Clark Ave	Light Truck	Years 1-3	251
Welders	4	Better. Rd/Clark Ave	Light Truck	Years 1-3	251
Other Contractors	20	Better. Rd/Clark Ave	Light Truck	Years 1-3	251
Deliveries	10	Betteravia Rd	Heavy Truck	Years 1-3	251
OPERATIONS					
Component	**# of Vehicles**	**Primary Route**	**Vehicle Type**	**Project Years**	**Days/year**
Light Crude Import	4	Betteravia Rd	Tanker Truck	Year 2 >>	365
Crude Export	28	Betteravia Rd	Tanker Truck	Year 2 >>	365
Contractors	4	Better. Rd/Clark Ave	Light Truck	Year 2 >>	251
Employees	24	Better. Rd/Clark Ave	Passenger	Year 2 >>	251

Table 3
Trip generation

	Development			**Operations**			**Total**		
Project Year	**ADT**	**AM PHT**	**PM PHT**	**ADT**	**AM PHT**	**PM PHT**	**ADT**	**AM PHT**	**PM PHT**
Year 1	200	45	45	0	0	0	200	45	45
Year 2 - 3	200	45	45	120	23	23	320	68	68
Year 4 - 15	*24*	6	6	*120*	*23*	*23*	*144*	*29*	*29*
Year 16 >>	0	0	0	120	23	23	120	23	23

The project would generate up to 320 ADT and 68 AM and PM peak hour trips during the first three development (construction) years. During the majority of the project life (Project Year 4 – 15), the project would generate up to 144 ADT and 29 AM and PM peak hour trips. Given that traffic assessments focus on traffic generated during the operational life of a project, and not project construction, traffic generated during the Project Year 4 - 15 are considered representative for traffic analysis purposes.

Project (Year 4 – 15) traffic was distributed based on the primary route designations shown in Table 2, where heavy trucks use Dominion Road to Betteravia Road, and all other vehicles use both available routes to the U.S. 101 and Orcutt/Santa Maria. Exhibit 2 shows the project-added ADT and AM and PM peak hour trips.

Existing plus Project Conditions

Roadways. The project would add 44 ADT to Clark Avenue east of U.S. 101, between 72 ADT and 100 ADT to Dominion Road and 72 ADT to Orcutt-Garey Road. These roadway segments currently operate in the LOS A range. The project additions would not change the roadway levels of service grade. The project would therefore not generate any significant roadway impacts based on the County's standards.

Intersections. The project would add 18 AM and PM peak hour trips to the Clark Avenue/Dominion Road intersection and 24 AM and PM peak hour trips to the Orcutt-Garey Road/Dominion Road intersection. Both intersections operate in LOS A range and the project's traffic additions would not change the level of service grade. The project would add 9 AM and PM peak hour trips to the Clark Avenue/Telephone Road intersection and the U.S. 101/Clark Avenue Interchange. These intersections operate at LOS A and LOS C, respectively. The low project's peak hour additions would not change the level of service grade. The project would therefore not generate any significant intersection impacts based on County and Caltrans standards.

CUMULATIVE CONDITIONS

Cumulative Traffic Forecasts. Cumulative traffic forecasts are developed using the Orcutt-Santa Maria Traffic Model and assume development of the approved and pending projects in Orcutt and Santa Maria and incorporates regional growth. The traffic model derived from the Rice Ranch Specific Plan[1] forecasts indicate no significant traffic volume changes to Clark Avenue east of U.S. 101.

[1] Rice Ranch Specific Plan, Revised Traffic and Circulation Study, Stantec, revised June 2, 2015.

Two development proposals that would potentially add traffic to the project area have been submitted since cumulative forecasts were generated. The Western Sky Amphitheater, proposed on Dominion Road south of Clark Avenue, proposes 10 events per year with 1,500 attendees. During events, the project is expected to add approximately 1,200 ADT to Clark Avenue and Dominion Road. Event traffic would occur outside of the PM peak hour. In addition, the North Garey Oil and Gas Production Plan, located along Garey and Foxen Canyon Roads, is expected to add 10 – 30 ADT to the area roadways.

Roadways. Clark Avenue east of U.S. 101 would carry approximately 5,500 ADT. Dominion Road would carry approximately 1,500 ADT north of Clark Avenue and 1,000 ADT south of Clark Avenue, and Orcutt-Garey Road would carry approximately 1,000 ADT. The project's additions of 44 ADT to Clark Avenue 72 - 100 ADT to Dominion Road and Orcutt-Garey Road would not change the roadway levels of service A grade. The project would therefore not generate any significant cumulative roadway impacts based on the County's standards.

Intersections. The study-area intersections within the County would continue to operate in the LOS A range and the Clark Avenue/U.S. 101 Interchange is forecast to operate at LOS E under cumulative conditions. The project's traffic additions to the County intersections (18 peak hour trips to the Clark Avenue/Dominion Road intersection, 24 peak hour trips to the Orcutt-Garey Road/Dominion Road intersection and 9 peak hour trips to the Clark Avenue/Telephone Road intersection) would not change the intersections levels of service.

The project would add 9 peak hour trips at the U.S. 101/Clark Avenue Interchange, thereby increasing delays and generating a cumulative impact based on Caltrans impact thresholds. Mitigation measures are included in the Mitigations section.

PROJECT ACCESS

Access to the site is proposed via one existing driveway located midway Orcutt-Garey Road adjacent to the power distribution plant and one existing driveway located on Dominion Road approximately 3,500 feet north of Palmer Road. Based on Caltrans corner sight distance and stopping sight distance criteria, adequate sight distance is provided at both driveways for trucks to enter the roadway.

CONCLUSIONS

The proposed project is expected to generate up to 144 ADT and 29 AM and PM peak hour trips during the majority of the project life (Project Year 4 – 15). The traffic analysis indicates that the project would not generate any significant project-specific impacts at the study area roadways

and intersections. The project would generate a cumulative impact by adding peak hour trips to the U.S. 101/Clark Avenue Interchange, which is forecast to operate at LOS E under cumulative conditions. The Orcutt Transportation Improvement Program (OTIP) includes a project to realign and signalize the interchange. The improvements, which are currently going through the Caltrans PA&ED process, are expected to be constructed in the near future and will result in LOS A operations under cumulative conditions. Table 4 shows the levels of service after implementation of the interchange improvements. No other improvements would be required.

Table 4
Mitigated Intersection Level of Service

Intersection	PM peak hour	
	Cumulative LOS	Cumulative Mitigated LOS
U.S. 101 SB Ramps/Clark Ave	47.4 sec/LOS E	0.48/LOS A
U.S. 101 NB Ramps/Clark Ave	38.4 sec/LOS E	0.53/LOS A

This concludes our Traffic Study for the United California, California and Bradley ("UCCB") Energy Project.

Sincerely,

STANTEC CONSULTING SERVICES INC.

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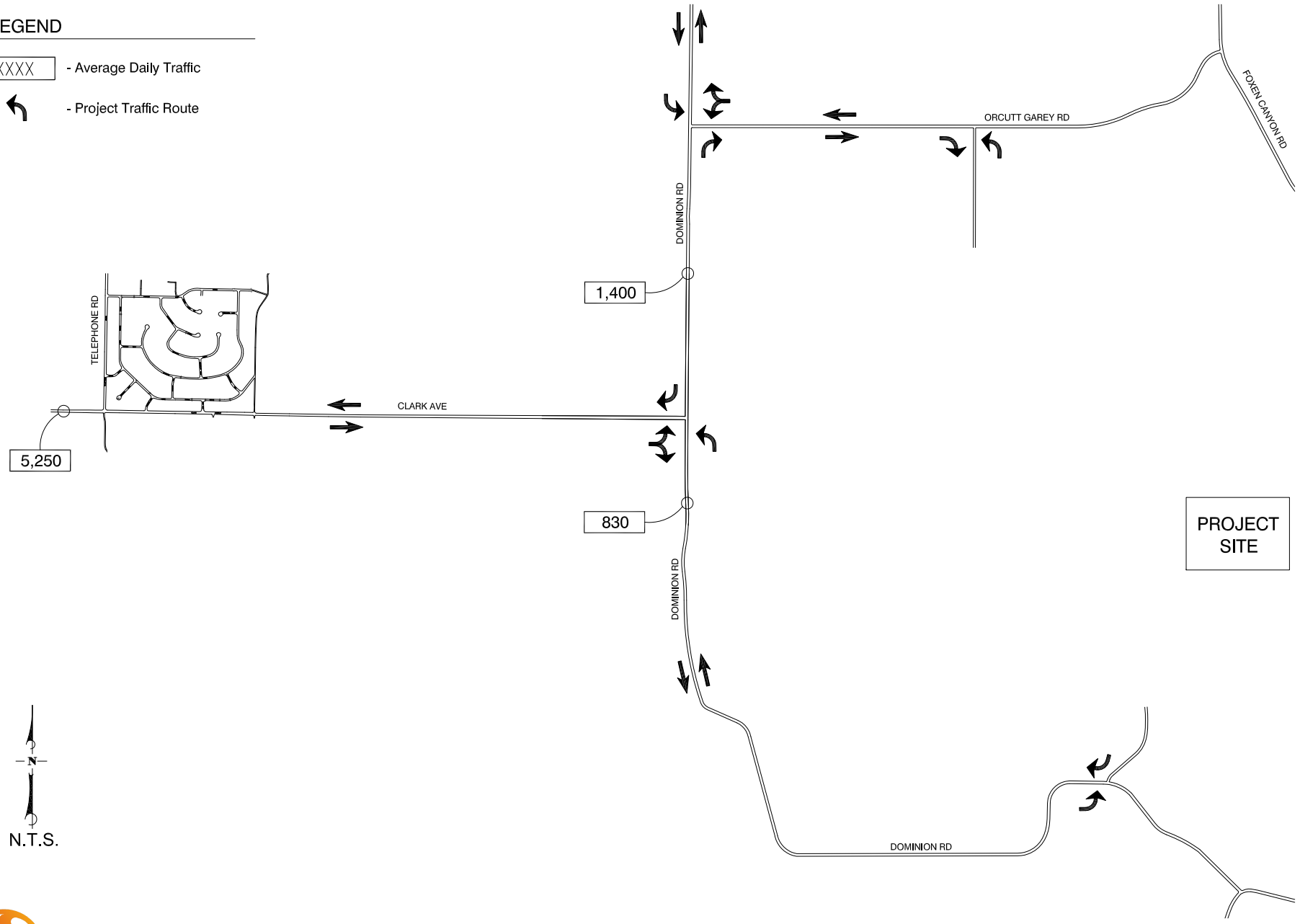

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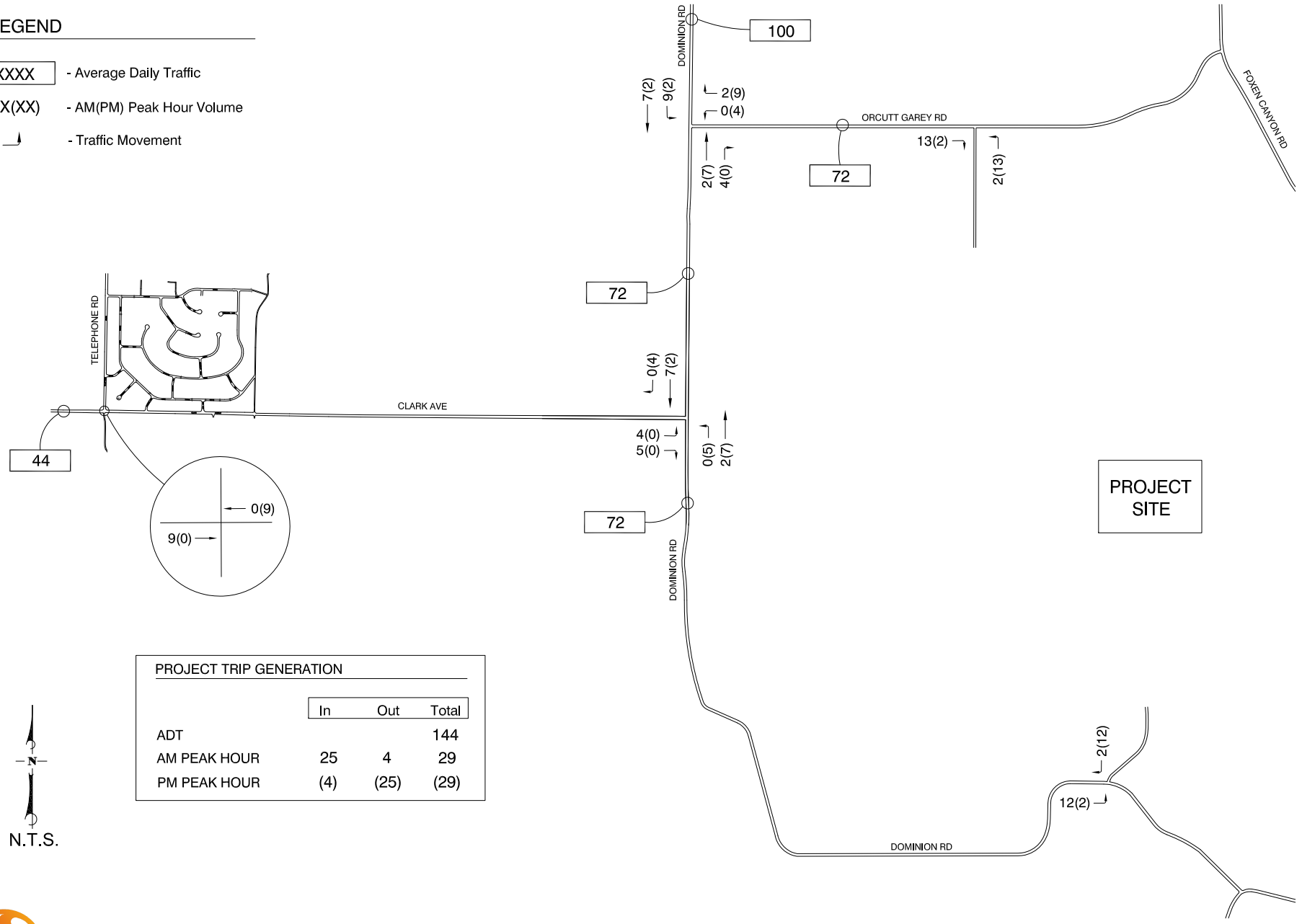
EXHIBIT 1
EXISTING TRAFFIC VOLUMES AND SITE ACCESS PLAN



PROJECT TRIP GENERATION

	In	Out	Total
ADT			144
AM PEAK HOUR	25	4	29
PM PEAK HOUR	(4)	(25)	(29)

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EXHIBIT 2
PROJECT-ADDED TRAFFIC VOLUMES

Roadway Classifications

Classification	Purpose and Design Factors	Design Capacity		LOS C Threshold[1]	
		2 Lane	4 Lane	2 Lane	4 Lane
Primary 1	Roadways designed to serve primarily non-residential development. Roadways would have a minimum of 12-foot wide lanes with shoulders and few curb cuts. Signals would be spaced at 1 mile or more intervals.	19,900	47,760	15,900	38,200
Primary 2	Roadways which serve a high proportion of non-residential development with some residential lots and few or no driveway curb cuts. Lane widths are a minimum of 12 feet with well spaced curb cuts. Signals intervals at a minimum of 1/2 mile.	17,900	42,480	14,300	34,000
Primary 3	Roadways designed to serve non-residential development and residential development. More frequent driveways are acceptable. Potential signal intervals of 1/2-1/4 mile.	15,700	37,680	12,500	30,100
Secondary 1	Roadways designed to primarily serve non-residential development and large lot residential development with well spaced driveways. Roadways would be 2 lanes with infrequent driveways. Signal would generally occur at intersections with primary roads.	11,600	NA	9,300	NA
Secondary 2	Roadways designed to serve residential and non-residential land uses. Roadways would be 2 lanes with close to moderately spaced driveways.	9,100	NA	7,300	NA
Secondary 3	Roadways designed to primarily serve residential with small to medium lots. Roadways are 2 lanes with more frequent driveways.	7,900	NA	6,300	NA

[1] Defined as 80% of Design Capacity.
Source: Santa Barbara County Public Works, Transportation Division.

Trips per Component

Component	Vehicle	Development			Operations		
		ADT	AM	PM	ADT	AM	PM
Rig Crew	heavy truck	12	3	3	12	3	3
	light truck/personal veh.	12	3	3	12	3	3
Roustabouts	light truck/personal veh.	24	6	6	0	0	0
Electricians	light truck/personal veh.	16	4	4	0	0	0
Welders	light truck/personal veh.	16	4	4	0	0	0
Other Contractors	light truck/personal veh.	80	20	20	0	0	0
Deliveries/Trucks	heavy truck	40	5	5	0	0	0
Light Crude Import	heavy truck	0	0	0	8	2	2
Crude Export	heavy truck	0	0	0	56	7	7
Contractors	light truck/personal veh.				8	2	2
Employees	light truck/personal veh.				48	12	12

UCCB Trip Generation Table

Year	Vehicle	Development			Operations			Total		
		ADT	AM	PM	ADT	AM	PM	ADT	AM	PM
Year 1	heavy truck	52	8	8	0	0	0	52	8	8
	light truck/personal veh.	148	37	37	0	0	0	148	37	37
	Total	**200**	**45**	**45**	**0**	**0**	**0**	**200**	**45**	**45**
Year 2	heavy truck	52	8	8	64	9	9	116	17	17
	light truck/personal veh.	148	37	37	56	14	14	204	51	51
	Total	**200**	**45**	**45**	**120**	**23**	**23**	**320**	**68**	**68**
Year 3	heavy truck	52	8	8	64	9	9	116	17	17
	light truck/personal veh.	148	37	37	56	14	14	204	51	51
	Total	**200**	**45**	**45**	**120**	**23**	**23**	**320**	**68**	**68**
Year 4 -15	heavy truck	12	3	3	64	9	9	76	12	12
	light truck/personal veh.	12	3	3	56	14	14	68	17	17
	Total	**24**	**6**	**6**	**120**	**23**	**23**	**144**	**29**	**29**
Year 16 -	heavy truck	0	0	0	64	9	9	64	9	9
	light truck/personal veh.	0	0	0	56	14	14	56	14	14
	Total	**0**	**0**	**0**	**120**	**23**	**23**	**120**	**23**	**23**