APPENDIX A

AIR QUALITY AND GREENHOUSE GAS ANALYSES

APPENDIX A.1

AIR QUALITY AND GREENHOUSE GAS TECHNICAL MEMORANDUM

APPENDIX A.2

HEALTH RISK ASSESSMENT

HEALTH RISK ASSESSMENT

Dunn's Inc.
7763 Avenue 280
Visalia, CA 93277

Prepared for:

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Alta Project: DUNN-19-8904

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ALTA ENVIRONMENTAL
AN NV5 COMPANY

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1.0 BACKGROUND

1.1 Purpose

Dunn's Inc. proposed to construct and operate a new facility in Visalia, California, which will consist of a concrete batch plant, a hot-mix asphalt (HMA) plant, and a reclaimed asphalt pavement (RAP) plant. The purpose of this report is to quantify emissions of toxic air contaminants (TAC) from the proposed project and to perform a health risk assessment (HRA) based on these emissions in accordance with the California Environmental Quality Act (CEQA) and Office of Environmental Health Hazard Assessment (OEHHA) regulations and guidelines.

1.2 Facility Setting

The proposed Dunn, Inc. facility (Dunn Facility, the Facility) is located at (7763 Avenue 280, Visalia, CA 93277), which is approximately three quarters of a mile west of the Avenue 280 and California State Route 99 (CA-99) junction. The Facility has a total area of approximately 18 acres. The Facility is surrounded by agricultural land in all directions, plus commercial properties are loosely scattered throughout the area. The nearest residence is approximately 750 feet east of the Facility on Avenue 280. The nearest worker receptor is approximately 1,000 feet east of the Facility on Avenue 280. The location and setting of the Facility can be seen in Figure 1 and Figure 2.

2.0 EXPOSURE ASSESSMENT

2.1 Operation Emissions Estimates

Operation of a concrete and HMA plant results in the generation of emissions. Specific sources of TACs at the proposed Dunn Facility include: the HMA dryer, asphalt oil storage tanks, cement silos, material transfer points, trucks used to transport material to and from the site, and off-road equipment to move material within the site. In certain cases, sources of TACs will be equipment with pollution control devices, such as baghouses and bin vents. The following sources of TACs were included in this risk assessment.

HMA Plant:

- Asphalt Dryer
- Oil Heater
- Oil Storage Tanks
- Silo Filling and Loadout
- RAP Cold Feed

Concrete Batch Plant:

- Cement Silo
- Fly Ash Silo
- Truck Loading

RAP:

- RAP Processing Plant

Other:

- Truck exhaust, including idling
  - Diesel Particulate Matter (DPM)
- Fugitive dust
  - Vehicle traffic
  - Stockpiles
  - Transfer Points

Detailed emission estimates and calculations are provided in Attachment 1.

2.2 Construction Emissions Estimates

Construction of the plants will result in the generation of emissions. Construction emissions were estimated using CalEEMod Version 2016.3.2. Based on the site plan, the total area of the site is approximately 18 acres or 800,000 ft^2. Construction is expected to take approximately one year with no demolition planned. Default assumptions were used for all inputs, except construction phase duration was changed to match the expected project schedule. A summary of the estimated Diesel Exhaust PM2.5 emissions for each construction phase is presented below. The CalEEMod emissions estimates are provided in Attachment 2. Total emissions from all phases of construction were used for the risk assessment.

	Onsite	Offsite	Total
	(tpy)		
Site Preparation	0.0101	0.00001	0.0101
Grading	0.0300	0.00002	0.0300
Building Construction	0.0914	0.00840	0.0998
Paving	0.0069	0.00001	0.0069
Arch. Coating	0.0011	0.00005	0.0012
Total	0.1395	0.00849	0.1480

2.3 Air Dispersion Modeling

Air dispersion modeling was performed to estimate ground level concentrations (GLCs) at and beyond the property boundary of the Facility. USEPA's AERMOD executable version 19191 via the BREEZE AERMOD software. Source release parameters were obtained from equipment specifications, published guidance documents, and facility personnel's knowledge of the expected equipment. Source parameters, such as name, location, release height, etc. are provided in Tables 1, 2 and 3.

Truck and off-road equipment emissions were modeled as a series of volume sources located along the expected path of travel. Emissions for these sources were divided evenly between the series of volume sources. For construction emissions, the lot was modeled as an area source.

2.3.1 Meteorological Data

AERMOD-ready meteorological data were obtained from the San Joaquin Valley Air Pollution Control District. Data from the Visalia Municipal Airport (VIS) meteorological station were selected as the Visalia Municipal Airport station is the closest to the Dunn Facility. Data at VIS are available for years 2007 through 2010. There are no intervening terrain features between VIS and the Dunn facility.

2.3.2 Terrain Data

Surface elevations for the various modeling objects in the modeling domain were imported from National Elevation Dataset (NED) files developed by the United States Geological Survey (USGS). NED files are available in 1-arc second resolution. A NED file purchased from BREEZE Modeling Software was used in the air dispersion modeling.

2.3.3 Model Options

The following options were used in running the AERMOD model based on OEHHA and USEPA modeling guidelines.

- AERMOD was executed using the rural modeling option.
- USEPA regulatory default options were implemented.
- The UTM, WGS 1984 projection was implemented.
- The pollutant was set to "Other"
- Regulatory default concentration only, was used, and no depletion options were selected.

2.3.4 Receptors

The Facility has a total area of approximately 18 acres. Twenty-five meter spacing was used for fenceline receptors and off-site receptors up to 100 meters beyond the facility boundaries. Fifty-meter spacing was used for receptors up to 250 meters out, 100-meter spacing up to 500 meters out, 250-meter spacing up to 1000 meters out, and 500-meter spacing up to 2000 meters out. Table 4 lists the location in UTM coordinates for each boundary receptor. Table 5 lists the location of each non-boundary receptor.

3.0 RISK CHARACTERIZATION

Air dispersion modeling results (plot [.plt] files) were imported into CARB's HARP software. HARP2 ADMRT software version 19121 was utilized to perform the dose-response assessment and calculate the potential cancer risk and non-cancer health impacts for the various receptors surrounding the proposed Dunn facility. The dose-response assessment and risk calculations were performed in accordance with OEHHA's Risk Assessment Guidelines (OEHHA, 2015) and San Joaquin Valley Air Pollution Control District's (SJVAPCD's) Guidance for Air Dispersion Modeling (SJVAPCD, 2007).

3.1 Exposure Assessment

3.1.1 Identification of Potentially Exposed Populations

The Facility is surrounded by agricultural land in all directions, plus commercial properties are loosely scattered throughout the area. The nearest residence is approximately 750 feet east of the Facility on Avenue 280. The nearest worker receptor is approximately 1,000 feet east of the Facility on Avenue 280. Table 4 and Table 5 list the locations in UTM coordinates for all receptors.

3.1.2 Exposure Pathways

3.1.2.1 Residents

The nearest residential receptors to the Dunn Facility are a row of houses located on Avenue 280. The following default residential exposure pathways were included in this HRA:

- Inhalation
- Soil ingestion
- Dermal absorption
- Mother's Milk
- Home Grown Produce

No site- or receptor-specific exposure pathways were identified.

3.1.2.2 Off-Site Workers

As stated above, the facility is surrounded by agricultural land in all directions, plus commercial properties are loosely scattered throughout the area. The following default worker exposure pathways were included in this HRA:

- Inhalation
- Soil ingestion
- Dermal absorption

3.1.3 HARP Exposure Analysis Methods and Assumptions

Cancer and non-cancer health impacts may be evaluated in HARP. Cancer risk is expressed as a theoretical probability of an individual person developing cancer as a result of exposure to carcinogenic substances. Noncancer risk is expressed with a hazard index number (HI) for pollutant-targeted organ systems: the cardiovascular system, central nervous system, immune system, kidneys, gastrointestinal tract and liver, reproductive/developmental system, respiratory system, skin, eyes, skeletal system, endocrine system, hematological system, physiological response to odors, and general toxicity (CARB, 2018). Calculations built into HARP2 ADMRT are based on the dose and risk calculation methodologies and pollutant risk factors contained within the OEHHA Risk Assessment Guidelines.

According to the OEHHA and SJVAPCD guidelines, different exposure scenarios should be used for residential and worker receptors. Exposure scenarios and assumptions for residential and worker receptors are identified in the following sections.

3.1.3.1 Residents

For notification and risk reduction purposes, a 70-year exposure scenario is used for residential receptors for cancer risk analysis, and the default exposure scenario is used for non-cancer risk analysis. A one-year exposure scenario was used for construction cancer risk analysis. The following additional parameters were selected in HARP:

- Receptor Type: Individual Resident
- Intake Rate Percentile: OEHHA Derived Method (when applicable)
- Exposure Frequency: 350 days per year
- Deposition Rate: 0.02 meters per second

3.1.3.2 Off-Site Workers

For notification and risk reduction purposes, a 40-year exposure scenario starting at the age of 18 is used for off-site worker receptors for cancer risk analysis, and the default exposure scenario is used for non-cancer risk analysis. A one-year exposure scenario was used for construction cancer risk analysis. The following additional parameters were selected in HARP:

- Receptor Type: Worker
- Intake Rate Percentile: OEHHA Derived Method (when applicable)
- Exposure Frequency: 250 days per year
- Deposition Rate: 0.02 meters per second

The Facility is operational 14 hours per day, 6 days per week. Therefore, the Worker Adjustment Factor (WAF) is 2.0.

3.2 Dose-Response Assessment

According to OEHHA, dose-response assessment describes the quantitative relationship between the amount of exposure to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). Dose-response information for noncancer health effects is used to determine Reference Exposure Levels (RELs). Dose-response information for cancer risks are based on cancer potency factors (OEHHA, 2015). Chronic RELs, 8-hour Chronic RELs, Acute RELs, and cancer potency factors for each pollutant are listed in the OEHHA Guidelines and built into HARP2. These values are periodically updated, and new versions of HARP2 incorporate the changes.

3.3 Risk Characterization Methodology

Risks are characterized using calculations and methodology contained in the OEHHA Guidelines and built into HARP2. Risk is calculated based on dose, dose-response values (RELs or cancer potency factors), and exposure duration and frequency. For this HRA, all risks were calculated using a Tier 1 approach using OEHHA default values.

3.3.1 Carcinogenic Risks

Carcinogenic risks are calculated for each receptor by calculating the dose of each pollutant at that receptor then following the calculation methodology in Section 8 of the OEHHA Guidelines. Multipathway risks are accounted for within HARP2 and follow the methodology in the guidelines.

3.3.2 Chronic Non-cancer Hazards

Chronic hazards are calculated using the period average ground level concentration of each pollutant compared to the chronic REL for each pollutant. The sum of the HIs for each pollutant is the total chronic HI for each receptor.

3.3.3 Acute Non-cancer Hazards

Acute non-cancer hazards are identical for residential and non-residential (worker) receptors. Therefore, only one set of methodology was utilized for acute non-cancer hazard index calculation. Acute hazards are calculated using the maximum 1-hour ground level concentration of each pollutant compared to the acute REL for each pollutant. The sum of the HIs for each pollutant is the total acute HI.

3.4 Risk Characterization Results

Risk results are presented at three locations: The Point of Maximum Impact (PMI), the Maximum Exposed Individual Resident (MEIR), and the Maximum Exposed Individual Worker (MEIW). The PMI is located on the property boundary, and no receptors are expected to reside there for significant periods of time. Therefore, CEQA significance thresholds of 20 in one million for cancer and 1 for non-cancer HI are assessed at the MEIR and MEIW. The locations of the PMI, MEIR, and MEIW are provided in the following table and shown in Figure 3.

Receptor	Receptor ID	UTM X (m)	UTM Y (m)
PMI	759	284,731.4	4,019,450.1
MEIR	730	284,928.3	4,019,640.9
MEIW	471	285,001.6	4,019,627.6

3.4.1 Cancer Risks

The following table summarizes the potential construction cancer risks at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Cancer Risk
PMI	284,731.4	4,019,450.1	1.0 in one million[1]
MEIR	284,928.3	4,019,640.9	5.0 in one million
MEIW	285,001.6	4,019,627.6	0.06 in one million

1. The cancer risk at the PMI presented above assumes the worker receptor exposure scenario because the PMI is located on the facility fenceline where residential receptors do not exist.

The following table summarizes the potential operation cancer risks at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Cancer Risk
PMI	284,731.4	4,019,450.1	3.7 in one million[2]
MEIR	284,928.3	4,019,640.9	8.7 in one million
MEIW	285,001.6	4,019,627.6	0.6 in one million

2. The cancer risk at the PMI presented above assumes the worker receptor exposure scenario because the PMI is located on the facility fenceline where residential receptors do not exist.

The following table summarizes the total potential (construction + operation) cancer risks at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Cancer Risk
PMI	284,731.4	4,019,450.1	9.4 in one million[3]
MEIR	284,928.3	4,019,640.9	13.7 in one million
MEIW	285,001.6	4,019,627.6	1.3 in one million[3]

3. Total cancer risks at the PMI and MEIW include the WAF of 2.0.

Diesel particulate matter (DPM) is the primary cancer risk driver.

3.4.2 Non-Cancer Chronic Health Index

The following table summarizes the potential construction non-cancer chronic HI at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Non-Cancer Chronic HI	Target Organ
PMI	284,731.4	4,019,450.1	7.6E-02[1]	RESP
MEIR	284,928.3	4,019,640.9	5.6E-03	RESP
MEIW	285,001.6	4,019,627.6	4.3E-03	RESP

1. The cancer risk at the PMI presented above assumes the worker receptor exposure scenario because the PMI is located on the facility fenceline where residential receptors do not exist.

Arsenic is the primary non-cancer chronic HI driver. The primary target organ for the non-cancer chronic HI is the respiratory system.

The following table summarizes the potential operation non-cancer chronic HI at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Non-Cancer Chronic HI	Target Organ
PMI	284,731.4	4,019,450.1	0.2[2]	RESP
MEIR	284,928.3	4,019,640.9	0.06	RESP
MEIW	285,001.6	4,019,627.6	0.02	RESP

2. The cancer risk at the PMI presented above assumes the worker receptor exposure scenario because the PMI is located on the facility fenceline where residential receptors do not exist.

Arsenic is the primary non-cancer chronic HI driver. The primary target organ for the non-cancer chronic HI is the respiratory system.

3.4.3 Non-Cancer Acute Health Index

The following table summarizes the potential construction non-cancer acute HI at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Non-Cancer Acute HI	Target Organ
PMI	284,731.4	4,019,450.1	0	N/A
MEIR	284,928.3	4,019,640.9	0	N/A
MEIW	285,001.6	4,019,627.6	0	N/A

The following table summarizes the potential operation non-cancer acute HI at the PMI, MEIR, and MEIW.

Receptor	UTM X (m)	UTM Y (m)	Non-Cancer Acute HI	Target Organ
PMI	284,731.4	4,019,450.1	0.3	IMMUN
MEIR	284,928.3	4,019,640.9	0.07	IMMUN
MEIW	285,001.6	4,019,627.6	0.07	IMMUN

Nickel is the primary non-cancer acute HI driver. The primary target organ system is the immune system.

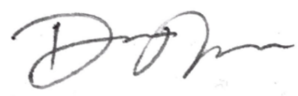
4.0 CONCLUSIONS

The total cancer risk is 13.6 in one million which is below the significance threshold of 20 in one million, the total non-cancer chronic HI is below 1, and the total non-cancer acute is below 1 at both the MEIR and MEIW. Therefore, the potential risks from TACs are below SJVAPCD CEQA significance thresholds.

5.0 SIGNATORY

For and on behalf of Alta Environmental:

Chris Waller, CPP
Director of EHS & Air



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6.0 REFERENCES

1. California Air Resources Board (CARB), 2018. Hotspots Analysis and Reporting Program (HARP)." June 11. Available online at: https://www.arb.ca.gov/toxics/harp/harp.htm.
2. Office of Environmental Health Hazard Assessment (OEHHA), 2015. "Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Risk Assessments." February. Available online at: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0
3. San Joaquin Valley Air Pollution Control District (SJVAPCD), 2007. "Guidance for Air Dispersion Modeling." Available online at: https://www.valleyair.org/busind/pto/Tox_Resources/Modeling%20Guidance.pdf.

Tables

Table 1: Point Source Parameters

Source ID	Source Name	UTM X (m)	UTM Y (m)	Elevation (ft)	Stack Height (ft)	Stack Temp (F°)	Stack Velocity (ft/min)	Stack Diameter (ft)
303	OILHEAT	284653.9	4019491.8	288.7467	20	300	0.1524	3
302	BAGSTK2	284666	4019510.1	288.878	30	225	10.75944	5.33
203	BAGSTK1	284550.6	4019519.4	288.4186	20	80.00006	18.50136	1.43
307	TRKIDL2	284676.5	4019499.5	288.878	12.6	199.13	50	0.328
201	BINVENT1	284539.7	4019514.2	288.3858	52	80.00006	2.7686	0.33
202	BINVENT2	284539.8	4019506	288.353	52	80.00006	2.7686	0.33
204	TRKIDL1	284554.5	4019506.9	288.4186	12.6	199.13	50	0.328
402	TRKIDL3	284529	4019465.3	288.189	12.6	199.13	50	0.328

Table 2: Volume Source Parameters

Source ID	Source Name	UTM X	UTM Y	Elevation	Release Height	Init. Lat. Dim.	Init. Vert. Dim.
		(m)	(m)	(ft)	(ft)	(m)	(m)
301	COLDFEED	284651	4019501.8	288.7467	2.7432	10.63142	2.83464
306	TRKLDOUT	284681	4019502.3	288.9108	3.048	1.41732	4.25196
304	OILTANKS	284660.9	4019491.9	288.7795	3.148584	3.401568	1.46304
205	AGGPILE1	284638	4019420	288.5171	9.144	43.09872	4.572
308	AGGPILE2	284688.9	4019420	288.7467	9.144	43.09872	4.572
403	RECPILE	284529.8	4019420	288.0577	9.144	43.09872	4.572
401	RAP	284529.5	4019453.2	288.1562	4.572	15.3232	4.572
1	OFF01	284487	4019674.4	288.3202	1.799996	12.09303	1.674419
2	OFF02	284512	4019674.8	288.4843	1.799996	12.09303	1.674419
3	OFF03	284537	4019675.2	288.6155	1.799996	12.09303	1.674419
4	OFF04	284562	4019675.6	288.7139	1.799996	12.09303	1.674419
5	OFF05	284587.0	4019676.0	288.8452	1.799996	12.09303	1.674419
6	OFF06	284612.0	4019676.4	288.9764	1.799996	12.09303	1.674419
7	OFF07	284637.0	4019676.8	289.0748	1.799996	12.09303	1.674419
8	OFF08	284662.0	4019677.2	289.1732	1.799996	12.09303	1.674419
9	OFF09	284687.0	4019677.6	289.2717	1.799996	12.09303	1.674419
10	OFF10	284712.0	4019678.0	289.3701	1.799996	12.09303	1.674419
11	OFF11	284737.0	4019678.4	289.4685	1.799996	12.09303	1.674419
12	OFF12	284762.0	4019678.8	289.5669	1.799996	12.09303	1.674419
13	OFF13	284787.0	4019679.2	289.6982	1.799996	12.09303	1.674419
14	OFF14	284812.0	4019679.6	289.8294	1.799996	12.09303	1.674419
15	OFF15	284837.0	4019680.0	289.9934	1.799996	12.09303	1.674419
16	OFF16	284862.0	4019680.4	290.0919	1.799996	12.09303	1.674419
17	OFF17	284886.9	4019680.8	290.2231	1.799996	12.09303	1.674419
18	OFF18	284911.9	4019681.2	290.3871	1.799996	12.09303	1.674419
19	OFF19	284936.9	4019681.6	290.5184	1.799996	12.09303	1.674419
20	OFF20	284961.9	4019682.0	290.6496	1.799996	12.09303	1.674419
21	OFF21	284986.9	4019682.4	290.8137	1.799996	12.09303	1.674419
22	OFF22	285011.9	4019682.8	290.9449	1.799996	12.09303	1.674419

Source ID	Source Name	UTM X	UTM Y	Elevation	Release Height	Init. Lat. Dim.	Init. Vert. Dim.
		(m)	(m)	(ft)	(ft)	(m)	(m)
23	OFF23	285036.9	4019683.3	291.0761	1.799996	12.09303	1.674419
24	OFF24	285061.9	4019683.7	291.2401	1.799996	12.09303	1.674419
25	OFF25	285086.9	4019684.1	291.3714	1.799996	12.09303	1.674419
26	OFF26	285111.9	4019684.5	291.4698	1.799996	12.09303	1.674419
27	OFF27	285136.9	4019684.9	291.6339	1.799996	12.09303	1.674419
28	OFF28	285161.9	4019685.3	291.7651	1.799996	12.09303	1.674419
29	OFF29	285186.9	4019685.7	291.8963	1.799996	12.09303	1.674419
30	OFF30	285211.9	4019686.1	292.0604	1.799996	12.09303	1.674419
31	OFF31	285236.9	4019686.5	292.1916	1.799996	12.09303	1.674419
32	OFF32	285261.9	4019686.9	292.3228	1.799996	12.09303	1.674419
33	OFF33	285286.9	4019687.3	292.4541	1.799996	12.09303	1.674419
34	OFF34	285311.9	4019687.7	292.5853	1.799996	12.09303	1.674419
35	OFF35	285336.9	4019688.1	292.7493	1.799996	12.09303	1.674419
36	OFF36	285361.9	4019688.5	292.8478	1.799996	12.09303	1.674419
37	OFF37	285386.9	4019688.9	292.9462	1.799996	12.09303	1.674419
38	OFF38	285411.9	4019689.3	293.0446	1.799996	12.09303	1.674419
39	OFF39	285436.9	4019689.7	293.1758	1.799996	12.09303	1.674419
40	OFF40	285461.9	4019690.1	293.2415	1.799996	12.09303	1.674419
41	OFF41	285486.9	4019690.5	293.3727	1.799996	12.09303	1.674419
42	OFF42	285511.9	4019690.9	293.4711	1.799996	12.09303	1.674419
43	OFF43	285536.8	4019691.6	293.6024	1.799996	12.09303	1.674419
44	OFF44	285561.8	4019693.5	293.668	1.799996	12.09303	1.674419
45	OFF45	285586.7	4019695.4	293.7992	1.799996	12.09303	1.674419
46	OFF46	285611.6	4019697.2	293.8648	1.799996	12.09303	1.674419
47	OFF47	285636.6	4019699.1	293.9633	1.799996	12.09303	1.674419
48	OFF48	285661.5	4019700.9	294.0289	1.799996	12.09303	1.674419
49	OFF49	285686.4	4019702.8	294.1273	1.799996	12.09303	1.674419
50	OFF50	285711.4	4019704.7	294.2585	1.799996	12.09303	1.674419
51	OFF51	285736.3	4019705.8	294.357	1.799996	12.09303	1.674419
52	OFF52	285761.3	4019706.1	294.4882	1.799996	12.09303	1.674419
53	OFF53	285786.3	4019706.5	294.6194	1.799996	12.09303	1.674419

Source ID	Source Name	UTM X	UTM Y	Elevation	Release Height	Init. Lat. Dim.	Init. Vert. Dim.
		(m)	(m)	(ft)	(ft)	(m)	(m)
101	ALLTR01	284490.6	4019652.1	288.3858	1.799996	12.09303	1.674419
102	ALLTR02	284495.5	4019627.6	288.353	1.799996	12.09303	1.674419
103	ALLTR03	284500.5	4019603.1	288.3858	1.799996	12.09303	1.674419
104	ALLTR04	284504	4019578.4	288.3858	1.799996	12.09303	1.674419
105	ALLTR05	284504	4019553.4	288.3202	1.799996	12.09303	1.674419
126	RTR01	284499.2	4019529.3	288.2874	1.799996	12.09303	1.674419
127	RTR02	284490.3	4019505.9	288.2218	1.799996	12.09303	1.674419
128	RTR03	284481.5	4019482.6	288.0905	1.799996	12.09303	1.674419
129	RTR04	284482.1	4019465.7	288.0577	1.799996	12.09303	1.674419
130	RTR05	284507.1	4019465.7	288.1234	1.799996	12.09303	1.674419
131	RTR06	284532.1	4019465.7	288.2218	1.799996	12.09303	1.674419
132	RTR07	284557.1	4019465.7	288.3202	1.799996	12.09303	1.674419
133	RTR08	284582.1	4019465.7	288.4186	1.799996	12.09303	1.674419
136	ARTR01	284600.2	4019472.6	288.4843	1.799996	12.09303	1.674419
106	ALLTR06	284600.3	4019497.6	288.5827	1.799996	12.09303	1.674419
107	ALLTR07	284600.4	4019522.6	288.6483	1.799996	12.09303	1.674419
108	ALLTR08	284600.5	4019547.6	288.7139	1.799996	12.09303	1.674419
109	ALLTR09	284600.5	4019572.6	288.7467	1.799996	12.09303	1.674419
110	ALLTR10	284599.3	4019596.3	288.8123	1.799996	12.09303	1.674419
111	ALLTR11	284574.3	4019596.3	288.7139	1.799996	12.09303	1.674419
112	ALLTR12	284549.3	4019596.3	288.6155	1.799996	12.09303	1.674419
113	ALLTR13	284524.3	4019596.3	288.4843	1.799996	12.09303	1.674419
134	ACTR01	284523.4	4019541.7	288.3858	1.799996	12.09303	1.674419
135	ACTR02	284548.4	4019542	288.5171	1.799996	12.09303	1.674419
114	CTR01	284554.3	4019523	288.4514	1.799996	12.09303	1.674419
115	CTR02	284554.3	4019498	288.3858	1.799996	12.09303	1.674419
116	CTR03	284577.5	4019496.2	288.4843	1.799996	12.09303	1.674419
118	ATR02	284623.1	4019523.1	288.7139	1.799996	12.09303	1.674419
119	ATR03	284648.1	4019523.3	288.8123	1.799996	12.09303	1.674419
120	ATR04	284673.1	4019523.5	288.9436	1.799996	12.09303	1.674419
121	ATR05	284676.5	4019501.9	288.878	1.799996	12.09303	1.674419

Source ID	Source Name	UTM X	UTM Y	Elevation	Release Height	Init. Lat. Dim.	Init. Vert. Dim.
		(m)	(m)	(ft)	(ft)	(m)	(m)
122	ATR06	284676.5	4019476.9	288.8123	1.799996	12.09303	1.674419
123	ATR07	284662.7	4019465.8	288.7467	1.799996	12.09303	1.674419
124	ATR08	284637.7	4019465.9	288.6155	1.799996	12.09303	1.674419
125	ATR09	284612.7	4019466.1	288.5171	1.799996	12.09303	1.674419
117	ATR01	284572.9	4019541.7	288.5827	1.799996	12.09303	1.674419
305	SILOFILL	284676.5	4019502.3	288.878	9.144	1.06952	9.144

Table 3: Area Source Parameters

Source ID	Source Name	UTM X (m)	UTM Y (m)	Elevation (ft)	Release Height (m)	X Length (ft)	Y Length (ft)	Angle degree	Init. Vert. Dim. (m)
54	AREA	284476.4	4019658.7	288.2874	1	914.3701	798.8845	89.3	1

Table 4: Boundary Receptor Coordinates

Receptor ID	X	Y
731	284469.7	4019674.8
732	284469.2	4019649.8
733	284468.8	4019624.8
734	284468.3	4019599.8
735	284467.8	4019574.8
736	284467.3	4019549.8
737	284466.8	4019524.8
738	284466.3	4019499.8
739	284465.8	4019474.8
740	284465.3	4019449.8
741	284464.9	4019424.8
742	284464.4	4019399.9
743	284463.9	4019374.9
744	284463.8	4019372.6
745	284486.6	4019372.3
746	284511.5	4019371.9
747	284536.5	4019371.6
748	284561.5	4019371.3
749	284586.5	4019370.9
750	284611.5	4019370.6
751	284636.5	4019370.3
752	284661.5	4019369.9
753	284686.5	4019369.6
754	284711.5	4019369.3
755	284730.4	4019369
756	284730.5	4019375.1
757	284730.8	4019400.1
758	284731.1	4019425.1
759	284731.4	4019450.1
760	284731.6	4019475.1
761	284731.9	4019500.1
762	284732.2	4019525.1
763	284732.5	4019550.1
764	284732.8	4019575.1
765	284733.1	4019600.1
766	284733.4	4019625.1
767	284733.6	4019650.1
768	284733.9	4019670.5
769	284729.3	4019670.6
770	284704.3	4019671
771	284679.3	4019671.4
772	284654.3	4019671.8
773	284629.3	4019672.2
774	284604.3	4019672.6
775	284579.4	4019673
776	284554.4	4019673.4
777	284529.4	4019673.8
778	284504.4	4019674.2
779	284479.4	4019674.6

Table 5: Gridded Receptor Coordinates

Receptor ID	X	Y
1	284351.6	4019277.6
2	284351.6	4019302.6
3	284351.6	4019327.6
4	284351.6	4019352.6
5	284351.6	4019377.6
6	284351.6	4019402.6
7	284351.6	4019427.6
8	284351.6	4019452.6
9	284351.6	4019477.6
10	284351.6	4019502.6
11	284351.6	4019527.6
12	284351.6	4019552.6
13	284351.6	4019577.6
14	284351.6	4019602.6
15	284351.6	4019627.6
16	284351.6	4019652.6
17	284351.6	4019677.6
18	284351.6	4019702.6
19	284351.6	4019727.6
20	284351.6	4019752.6
21	284351.6	4019777.6
22	284376.6	4019277.6
23	284376.6	4019302.6
24	284376.6	4019327.6
25	284376.6	4019352.6
26	284376.6	4019377.6
27	284376.6	4019402.6
28	284376.6	4019427.6
29	284376.6	4019452.6
30	284376.6	4019477.6
31	284376.6	4019502.6
32	284376.6	4019527.6
33	284376.6	4019552.6
34	284376.6	4019577.6
35	284376.6	4019602.6
36	284376.6	4019627.6
37	284376.6	4019652.6
38	284376.6	4019677.6
39	284376.6	4019702.6
40	284376.6	4019727.6
41	284376.6	4019752.6
42	284376.6	4019777.6
43	284401.6	4019277.6
44	284401.6	4019302.6
45	284401.6	4019327.6
46	284401.6	4019352.6
47	284401.6	4019377.6
48	284401.6	4019402.6
49	284401.6	4019427.6
50	284401.6	4019452.6
51	284401.6	4019477.6
52	284401.6	4019502.6
53	284401.6	4019527.6
54	284401.6	4019552.6
55	284401.6	4019577.6
56	284401.6	4019602.6
57	284401.6	4019627.6
58	284401.6	4019652.6
59	284401.6	4019677.6
60	284401.6	4019702.6
61	284401.6	4019727.6
62	284401.6	4019752.6
63	284401.6	4019777.6
64	284426.6	4019277.6
65	284426.6	4019302.6
66	284426.6	4019327.6
67	284426.6	4019352.6
68	284426.6	4019377.6
69	284426.6	4019402.6
70	284426.6	4019427.6
71	284426.6	4019452.6
72	284426.6	4019477.6
73	284426.6	4019502.6
74	284426.6	4019527.6
75	284426.6	4019552.6
76	284426.6	4019577.6
77	284426.6	4019602.6
78	284426.6	4019627.6

79	284426.6	4019652.6
80	284426.6	4019677.6
81	284426.6	4019702.6
82	284426.6	4019727.6
83	284426.6	4019752.6
84	284426.6	4019777.6
85	284451.6	4019277.6
86	284451.6	4019302.6
87	284451.6	4019327.6
88	284451.6	4019352.6
89	284451.6	4019377.6
90	284451.6	4019402.6
91	284451.6	4019427.6
92	284451.6	4019452.6
93	284451.6	4019477.6
94	284451.6	4019502.6
95	284451.6	4019527.6
96	284451.6	4019552.6
97	284451.6	4019577.6
98	284451.6	4019602.6
99	284451.6	4019627.6
100	284451.6	4019652.6
101	284451.6	4019677.6
102	284451.6	4019702.6
103	284451.6	4019727.6
104	284451.6	4019752.6
105	284451.6	4019777.6
106	284476.6	4019277.6
107	284476.6	4019302.6
108	284476.6	4019327.6
109	284476.6	4019352.6
110	284476.6	4019677.6
111	284476.6	4019702.6
112	284476.6	4019727.6
113	284476.6	4019752.6
114	284476.6	4019777.6
115	284501.6	4019277.6
116	284501.6	4019302.6
117	284501.6	4019327.6
118	284501.6	4019352.6
119	284501.6	4019677.6

120	284501.6	4019702.6
121	284501.6	4019727.6
122	284501.6	4019752.6
123	284501.6	4019777.6
124	284526.6	4019277.6
125	284526.6	4019302.6
126	284526.6	4019327.6
127	284526.6	4019352.6
128	284526.6	4019677.6
129	284526.6	4019702.6
130	284526.6	4019727.6
131	284526.6	4019752.6
132	284526.6	4019777.6
133	284551.6	4019277.6
134	284551.6	4019302.6
135	284551.6	4019327.6
136	284551.6	4019352.6
137	284551.6	4019677.6
138	284551.6	4019702.6
139	284551.6	4019727.6
140	284551.6	4019752.6
141	284551.6	4019777.6
142	284576.6	4019277.6
143	284576.6	4019302.6
144	284576.6	4019327.6
145	284576.6	4019352.6
146	284576.6	4019677.6
147	284576.6	4019702.6
148	284576.6	4019727.6
149	284576.6	4019752.6
150	284576.6	4019777.6
151	284601.6	4019277.6
152	284601.6	4019302.6
153	284601.6	4019327.6
154	284601.6	4019352.6
155	284601.6	4019677.6
156	284601.6	4019702.6
157	284601.6	4019727.6
158	284601.6	4019752.6
159	284601.6	4019777.6
160	284626.6	4019277.6

161	284626.6	4019302.6
162	284626.6	4019327.6
163	284626.6	4019352.6
164	284626.6	4019677.6
165	284626.6	4019702.6
166	284626.6	4019727.6
167	284626.6	4019752.6
168	284626.6	4019777.6
169	284651.6	4019277.6
170	284651.6	4019302.6
171	284651.6	4019327.6
172	284651.6	4019352.6
173	284651.6	4019677.6
174	284651.6	4019702.6
175	284651.6	4019727.6
176	284651.6	4019752.6
177	284651.6	4019777.6
178	284676.6	4019277.6
179	284676.6	4019302.6
180	284676.6	4019327.6
181	284676.6	4019352.6
182	284676.6	4019677.6
183	284676.6	4019702.6
184	284676.6	4019727.6
185	284676.6	4019752.6
186	284676.6	4019777.6
187	284701.6	4019277.6
188	284701.6	4019302.6
189	284701.6	4019327.6
190	284701.6	4019352.6
191	284701.6	4019677.6
192	284701.6	4019702.6
193	284701.6	4019727.6
194	284701.6	4019752.6
195	284701.6	4019777.6
196	284726.6	4019277.6
197	284726.6	4019302.6
198	284726.6	4019327.6
199	284726.6	4019352.6
200	284726.6	4019677.6
201	284726.6	4019702.6

202	284726.6	4019727.6
203	284726.6	4019752.6
204	284726.6	4019777.6
205	284751.6	4019277.6
206	284751.6	4019302.6
207	284751.6	4019327.6
208	284751.6	4019352.6
209	284751.6	4019377.6
210	284751.6	4019402.6
211	284751.6	4019427.6
212	284751.6	4019452.6
213	284751.6	4019477.6
214	284751.6	4019502.6
215	284751.6	4019527.6
216	284751.6	4019552.6
217	284751.6	4019577.6
218	284751.6	4019602.6
219	284751.6	4019627.6
220	284751.6	4019652.6
221	284751.6	4019677.6
222	284751.6	4019702.6
223	284751.6	4019727.6
224	284751.6	4019752.6
225	284751.6	4019777.6
226	284776.6	4019277.6
227	284776.6	4019302.6
228	284776.6	4019327.6
229	284776.6	4019352.6
230	284776.6	4019377.6
231	284776.6	4019402.6
232	284776.6	4019427.6
233	284776.6	4019452.6
234	284776.6	4019477.6
235	284776.6	4019502.6
236	284776.6	4019527.6
237	284776.6	4019552.6
238	284776.6	4019577.6
239	284776.6	4019602.6
240	284776.6	4019627.6
241	284776.6	4019652.6
242	284776.6	4019677.6

243	284776.6	4019702.6
244	284776.6	4019727.6
245	284776.6	4019752.6
246	284776.6	4019777.6
247	284801.6	4019277.6
248	284801.6	4019302.6
249	284801.6	4019327.6
250	284801.6	4019352.6
251	284801.6	4019377.6
252	284801.6	4019402.6
253	284801.6	4019427.6
254	284801.6	4019452.6
255	284801.6	4019477.6
256	284801.6	4019502.6
257	284801.6	4019527.6
258	284801.6	4019552.6
259	284801.6	4019577.6
260	284801.6	4019602.6
261	284801.6	4019627.6
262	284801.6	4019652.6
263	284801.6	4019677.6
264	284801.6	4019702.6
265	284801.6	4019727.6
266	284801.6	4019752.6
267	284801.6	4019777.6
268	284826.6	4019277.6
269	284826.6	4019302.6
270	284826.6	4019327.6
271	284826.6	4019352.6
272	284826.6	4019377.6
273	284826.6	4019402.6
274	284826.6	4019427.6
275	284826.6	4019452.6
276	284826.6	4019477.6
277	284826.6	4019502.6
278	284826.6	4019527.6
279	284826.6	4019552.6
280	284826.6	4019577.6
281	284826.6	4019602.6
282	284826.6	4019627.6
283	284826.6	4019652.6

284	284826.6	4019677.6
285	284826.6	4019702.6
286	284826.6	4019727.6
287	284826.6	4019752.6
288	284826.6	4019777.6
289	284851.6	4019277.6
290	284851.6	4019302.6
291	284851.6	4019327.6
292	284851.6	4019352.6
293	284851.6	4019377.6
294	284851.6	4019402.6
295	284851.6	4019427.6
296	284851.6	4019452.6
297	284851.6	4019477.6
298	284851.6	4019502.6
299	284851.6	4019527.6
300	284851.6	4019552.6
301	284851.6	4019577.6
302	284851.6	4019602.6
303	284851.6	4019627.6
304	284851.6	4019652.6
305	284851.6	4019677.6
306	284851.6	4019702.6
307	284851.6	4019727.6
308	284851.6	4019752.6
309	284851.6	4019777.6
310	284201.6	4019127.6
311	284201.6	4019177.6
312	284201.6	4019227.6
313	284201.6	4019277.6
314	284201.6	4019327.6
315	284201.6	4019377.6
316	284201.6	4019427.6
317	284201.6	4019477.6
318	284201.6	4019527.6
319	284201.6	4019577.6
320	284201.6	4019627.6
321	284201.6	4019677.6
322	284201.6	4019727.6
323	284201.6	4019777.6
324	284201.6	4019827.6

325	284201.6	4019877.6
326	284201.6	4019927.6
327	284251.6	4019127.6
328	284251.6	4019177.6
329	284251.6	4019227.6
330	284251.6	4019277.6
331	284251.6	4019327.6
332	284251.6	4019377.6
333	284251.6	4019427.6
334	284251.6	4019477.6
335	284251.6	4019527.6
336	284251.6	4019577.6
337	284251.6	4019627.6
338	284251.6	4019677.6
339	284251.6	4019727.6
340	284251.6	4019777.6
341	284251.6	4019827.6
342	284251.6	4019877.6
343	284251.6	4019927.6
344	284301.6	4019127.6
345	284301.6	4019177.6
346	284301.6	4019227.6
347	284301.6	4019277.6
348	284301.6	4019327.6
349	284301.6	4019377.6
350	284301.6	4019427.6
351	284301.6	4019477.6
352	284301.6	4019527.6
353	284301.6	4019577.6
354	284301.6	4019627.6
355	284301.6	4019677.6
356	284301.6	4019727.6
357	284301.6	4019777.6
358	284301.6	4019827.6
359	284301.6	4019877.6
360	284301.6	4019927.6
361	284351.6	4019127.6
362	284351.6	4019177.6
363	284351.6	4019227.6
364	284351.6	4019827.6
365	284351.6	4019877.6
366	284351.6	4019927.6
367	284401.6	4019127.6
368	284401.6	4019177.6
369	284401.6	4019227.6
370	284401.6	4019827.6
371	284401.6	4019877.6
372	284401.6	4019927.6
373	284451.6	4019127.6
374	284451.6	4019177.6
375	284451.6	4019227.6
376	284451.6	4019827.6
377	284451.6	4019877.6
378	284451.6	4019927.6
379	284501.6	4019127.6
380	284501.6	4019177.6
381	284501.6	4019227.6
382	284501.6	4019827.6
383	284501.6	4019877.6
384	284501.6	4019927.6
385	284551.6	4019127.6
386	284551.6	4019177.6
387	284551.6	4019227.6
388	284551.6	4019827.6
389	284551.6	4019877.6
390	284551.6	4019927.6
391	284601.6	4019127.6
392	284601.6	4019177.6
393	284601.6	4019227.6
394	284601.6	4019827.6
395	284601.6	4019877.6
396	284601.6	4019927.6
397	284651.6	4019127.6
398	284651.6	4019177.6
399	284651.6	4019227.6
400	284651.6	4019827.6
401	284651.6	4019877.6
402	284651.6	4019927.6
403	284701.6	4019127.6
404	284701.6	4019177.6
405	284701.6	4019227.6
406	284701.6	4019827.6

407	284701.6	4019877.6
408	284701.6	4019927.6
409	284751.6	4019127.6
410	284751.6	4019177.6
411	284751.6	4019227.6
412	284751.6	4019827.6
413	284751.6	4019877.6
414	284751.6	4019927.6
415	284801.6	4019127.6
416	284801.6	4019177.6
417	284801.6	4019227.6
418	284801.6	4019827.6
419	284801.6	4019877.6
420	284801.6	4019927.6
421	284851.6	4019127.6
422	284851.6	4019177.6
423	284851.6	4019227.6
424	284851.6	4019827.6
425	284851.6	4019877.6
426	284851.6	4019927.6
427	284901.6	4019127.6
428	284901.6	4019177.6
429	284901.6	4019227.6
430	284901.6	4019277.6
431	284901.6	4019327.6
432	284901.6	4019377.6
433	284901.6	4019427.6
434	284901.6	4019477.6
435	284901.6	4019527.6
436	284901.6	4019577.6
437	284901.6	4019627.6
438	284901.6	4019677.6
439	284901.6	4019727.6
440	284901.6	4019777.6
441	284901.6	4019827.6
442	284901.6	4019877.6
443	284901.6	4019927.6
444	284951.6	4019127.6
445	284951.6	4019177.6
446	284951.6	4019227.6
447	284951.6	4019277.6

448	284951.6	4019327.6
449	284951.6	4019377.6
450	284951.6	4019427.6
451	284951.6	4019477.6
452	284951.6	4019527.6
453	284951.6	4019577.6
454	284951.6	4019627.6
455	284951.6	4019677.6
456	284951.6	4019727.6
457	284951.6	4019777.6
458	284951.6	4019827.6
459	284951.6	4019877.6
460	284951.6	4019927.6
461	285001.6	4019127.6
462	285001.6	4019177.6
463	285001.6	4019227.6
464	285001.6	4019277.6
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467	285001.6	4019427.6
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469	285001.6	4019527.6
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471	285001.6	4019627.6
472	285001.6	4019677.6
473	285001.6	4019727.6
474	285001.6	4019777.6
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477	285001.6	4019927.6
478	283951.6	4018877.6
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480	283951.6	4019077.6
481	283951.6	4019177.6
482	283951.6	4019277.6
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491	283951.6	4020177.6
492	284051.6	4018877.6
493	284051.6	4018977.6
494	284051.6	4019077.6
495	284051.6	4019177.6
496	284051.6	4019277.6
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500	284051.6	4019677.6
501	284051.6	4019777.6
502	284051.6	4019877.6
503	284051.6	4019977.6
504	284051.6	4020077.6
505	284051.6	4020177.6
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507	284151.6	4018977.6
508	284151.6	4019077.6
509	284151.6	4019177.6
510	284151.6	4019277.6
511	284151.6	4019377.6
512	284151.6	4019477.6
513	284151.6	4019577.6
514	284151.6	4019677.6
515	284151.6	4019777.6
516	284151.6	4019877.6
517	284151.6	4019977.6
518	284151.6	4020077.6
519	284151.6	4020177.6
520	284251.6	4018877.6
521	284251.6	4018977.6
522	284251.6	4019077.6
523	284251.6	4019977.6
524	284251.6	4020077.6
525	284251.6	4020177.6
526	284351.6	4018877.6
527	284351.6	4018977.6
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531	284351.6	4020177.6
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533	284451.6	4018977.6
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535	284451.6	4019977.6
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537	284451.6	4020177.6
538	284551.6	4018877.6
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542	284551.6	4020077.6
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544	284651.6	4018877.6
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556	284851.6	4018877.6
557	284851.6	4018977.6
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559	284851.6	4019977.6
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561	284851.6	4020177.6
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563	284951.6	4018977.6
564	284951.6	4019077.6
565	284951.6	4019977.6
566	284951.6	4020077.6
567	284951.6	4020177.6
568	285051.6	4018877.6
569	285051.6	4018977.6
570	285051.6	4019077.6

571	285051.6	4019177.6
572	285051.6	4019277.6
573	285051.6	4019377.6
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598	285251.6	4019077.6
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601	285251.6	4019377.6
602	285251.6	4019477.6
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604	285251.6	4019677.6
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606	285251.6	4019877.6
607	285251.6	4019977.6
608	285251.6	4020077.6
609	285251.6	4020177.6
610	283451.6	4018377.6
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613	283451.6	4019127.6
614	283451.6	4019377.6
615	283451.6	4019627.6
616	283451.6	4019877.6
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618	283451.6	4020377.6
619	283451.6	4020627.6
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621	283701.6	4018627.6
622	283701.6	4018877.6
623	283701.6	4019127.6
624	283701.6	4019377.6
625	283701.6	4019627.6
626	283701.6	4019877.6
627	283701.6	4020127.6
628	283701.6	4020377.6
629	283701.6	4020627.6
630	283951.6	4018377.6
631	283951.6	4018627.6
632	283951.6	4020377.6
633	283951.6	4020627.6
634	284201.6	4018377.6
635	284201.6	4018627.6
636	284201.6	4020377.6
637	284201.6	4020627.6
638	284451.6	4018377.6
639	284451.6	4018627.6
640	284451.6	4020377.6
641	284451.6	4020627.6
642	284701.6	4018377.6
643	284701.6	4018627.6
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650	285201.6	4018377.6
651	285201.6	4018627.6
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653	285201.6	4020627.6
654	285451.6	4018377.6
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659	285451.6	4019627.6
660	285451.6	4019877.6
661	285451.6	4020127.6
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663	285451.6	4020627.6
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668	285701.6	4019377.6
669	285701.6	4019627.6
670	285701.6	4019877.6
671	285701.6	4020127.6
672	285701.6	4020377.6
673	285701.6	4020627.6
674	282451.6	4017377.6
675	282451.6	4017877.6
676	282451.6	4018377.6
677	282451.6	4018877.6
678	282451.6	4019377.6
679	282451.6	4019877.6
680	282451.6	4020377.6
681	282451.6	4020877.6
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686	282951.6	4018877.6
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689	282951.6	4020377.6
690	282951.6	4020877.6
691	282951.6	4021377.6

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693	283451.6	4017877.6
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697	283951.6	4017877.6
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699	283951.6	4021377.6
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701	284451.6	4017877.6
702	284451.6	4020877.6
703	284451.6	4021377.6
704	284951.6	4017377.6
705	284951.6	4017877.6
706	284951.6	4020877.6
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708	285451.6	4017377.6
709	285451.6	4017877.6
710	285451.6	4020877.6
711	285451.6	4021377.6
712	285951.6	4017377.6
713	285951.6	4017877.6
714	285951.6	4018377.6
715	285951.6	4018877.6
716	285951.6	4019377.6
717	285951.6	4019877.6
718	285951.6	4020377.6
719	285951.6	4020877.6
720	285951.6	4021377.6
721	286451.6	4017377.6
722	286451.6	4017877.6
723	286451.6	4018377.6
724	286451.6	4018877.6
725	286451.6	4019377.6
726	286451.6	4019877.6
727	286451.6	4020377.6
728	286451.6	4020877.6
729	286451.6	4021377.6
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Figures

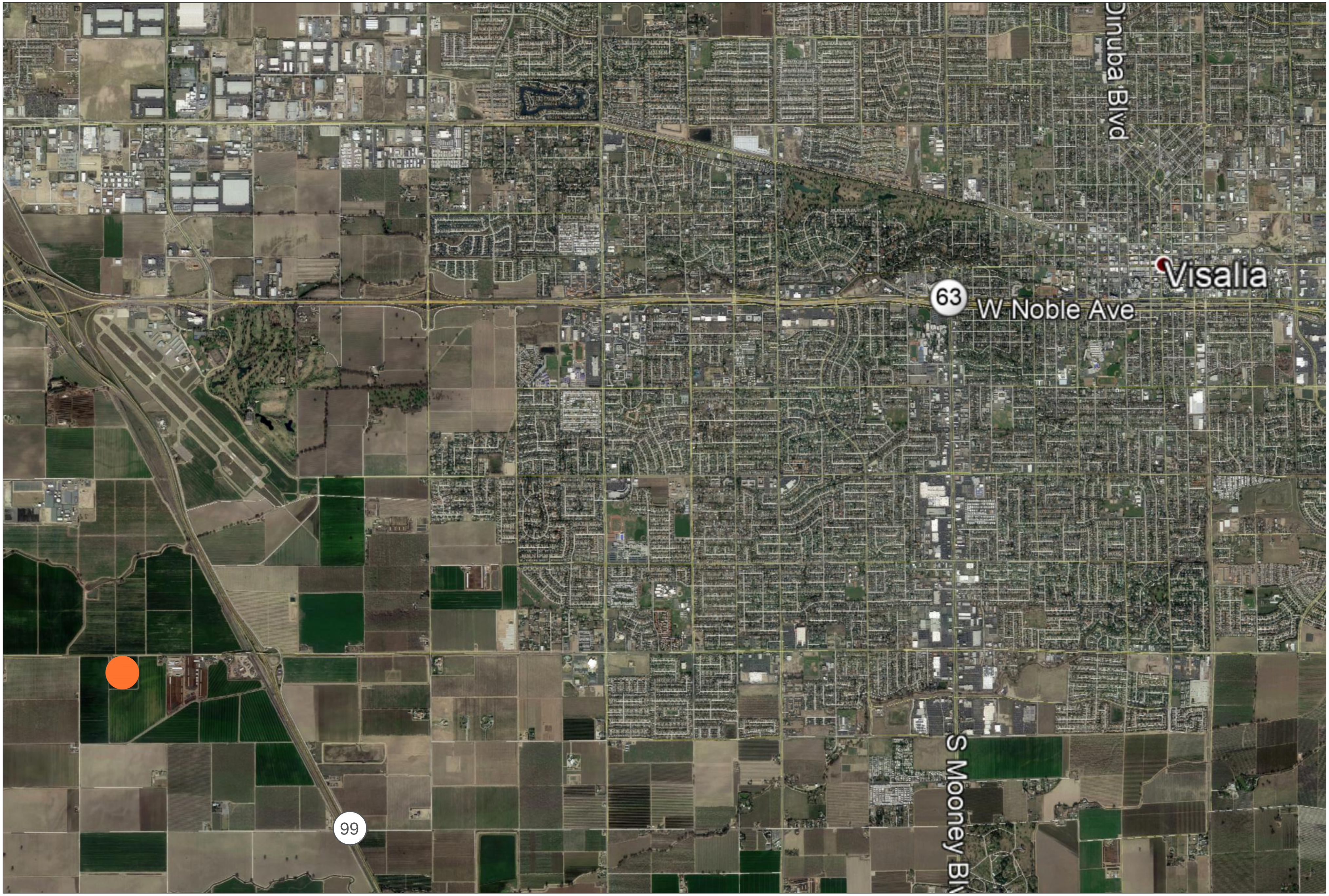

FIGURE 1: Site Vicinity

LEGEND

Facility Location

NOT TO SCALE NORTH

CLIENT:
Dunn, Inc.

SITE LOCATION:
7763 Avenue 280
Visalia, CA 93277

ALTA ENVIRONMENTAL
AN NV5 COMPANY
3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807
P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com

FIGURE 2: Site Boundaries

LEGEND

Facility Boundary

NOT TO SCALE NORTH

CLIENT:
Dunn, Inc.

SITE LOCATION:
7763 Avenue 280
Visalia, CA 93277

ALTA ENVIRONMENTAL
AN NV5 COMPANY
3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807
P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com

FIGURE 3: Cancer Risk

LEGEND

- Facility Boundary
- PMI
- MICR Resident
- MICR Worker

NOT TO SCALE NORTH

CLIENT:
Dunn, Inc.

SITE LOCATION:
7763 Avenue 280
Visalia, CA 93277

ALTA ENVIRONMENTAL
AN NV5 COMPANY
3777 Long Beach Blvd. Annex Bldg. Long Beach CA 90807
P: (562) 495-5777 ♦ F: (562) 495-5877 ♦ altaenviron.com

Attachment 1:

Emission Calculations

HMA - Dryer Emissions

Pollutant	Production (tons/year)	EF (lbs/ton)	Emissions (lbs/year)	Emissions (tons/year)	Emissions (lbs/day)	EF Basis
PM10	150,000	0.023	3,450	1.73	11.06	AP-42 11.1

AP-42 11.1 does not provide EFs for criteria and toxics for propane dryer so SCAQMD default EFs were used as follows

Pollutant	Hot Oil Heat Requirement (mmBTU/hr)	Propane Heating Value (mmBTU/mgal)	SCAQMD EF (lbs/mgal)*	Emissions (lbs/hr)	Operating Schedule (hours/year)	Emissions (lbs/year)	Emissions (tons/year)	Emissions (lbs/day)
VOC	135	94	0.26	0.373	4,368	1,631.03	0.82	5.23
SOx	135	94	4.60	6.606	4,368	28,856.68	14.43	92.49
NOx	135	94	0.49	0.704	4,368	3,073.86	1.54	9.85
CO	135	94	2.92	4.194	4,368	18,317.72	9.16	58.71

Benzene	135	94	0.00015	0.0002	4,368	0.941
Formaldehyde	135	94	0.00032	0.0005	4,368	2.007
PAHs	135	94	0.00001	1.44E-05	4,368	0.063
Naphthalene	135	94	0.00003	4.31E-05	4,368	0.188
Acetaldehyde	135	94	0.00008	0.0001	4,368	0.502
Acrolein	135	94	0.00007	0.0001	4,368	0.439
Ammonia	135	94	0.30000	0.4309	4,368	1,881.957
Ethyl benzene	135	94	0.00018	0.0003	4,368	1.129
Hexane	135	94	0.00012	0.0002	4,368	0.753
Toluene	135	94	0.00069	0.0010	4,368	4.329
Xylene	135	94	0.00051	0.0007	4,368	3.199

*From AER reporting tool external combustion EFs and AER supplemental instructions EFs for propane dryers

NOx and CO will be subject to Rule 4309

https://www.valleyair.org/rules/currntrules/r4309.pdf

NOx = 4.3 ppmv @ 19% O2

CO = 42 ppmv @ 19% O2

HMA - Dryer Emissions

Metal	Production (tons/year)	EF (lbs/ton)	Max Emissions (lbs/year)	Emissions (lbs/hr)
Antimony	150,000	1.80E-07	0.027	1.08E-05
Arsenic	150,000	5.60E-07	0.084	3.37E-05
Barium	150,000	5.80E-06	0.870	3.49E-04
Beryllium	150,000	0.00E+00	0.000	0.00E+00
Cadmium	150,000	4.10E-07	0.062	2.46E-05
Chromium	150,000	5.50E-06	0.825	3.31E-04
Cobalt	150,000	2.60E-08	0.004	1.56E-06
Copper	150,000	3.10E-06	0.465	1.86E-04
Hexavalent chror	150,000	4.50E-07	0.068	2.70E-05
Lead	150,000	6.20E-07	0.093	3.73E-05
Manganese	150,000	7.70E-06	1.155	4.63E-04
Mercury	150,000	2.40E-07	0.036	1.44E-05
Nickel	150,000	6.30E-05	9.450	3.79E-03
Phosphorus	150,000	2.80E-05	4.200	1.68E-03
Silver	150,000	4.80E-07	0.072	2.88E-05
Selenium	150,000	3.50E-07	0.053	2.10E-05
Thallium	150,000	4.10E-09	0.001	2.46E-07
Zinc	150,000	6.10E-05	9.150	3.67E-03

From AP 42 Table 11.10-12

HMA - Oil Heater Emissions

Pollutant	Hot Oil Heat Requirement (mmBTU/hr)	Propane Heating Value (mmBTU/mgal)*	SCAQMD EF (lbs/mgal)**	EF (lbs/hr)	Operating Schedule (hours/year)	Emissions (lbs/yr)	Emissions (tons/year)	Emissions (lbs/day)
PM10	2	94	0.28	0.006	4,368	26.0	0.013	0.083
VOC	2	94	0.26	0.006	4,368	24.2	0.012	0.077
SOx	2	94	4.60	0.098	4,368	427.5	0.214	1.370
NOx	2	94	12.8	0.272	4,368	1,189.6	0.595	3.813
CO	2	94	3.2	0.068	4,368	297.4	0.149	0.953
Benzene	2	94	0.00071	0.000015	4,368	0.066	3.30E-05	2.11E-04
Formaldehyde	2	94	0.00151	0.000032	4,368	0.140	7.02E-05	4.50E-04
PAHs	2	94	0.00001	0.000000	4,368	0.001	4.65E-07	2.98E-06
Naphthalene	2	94	0.00003	0.000001	4,368	0.003	1.39E-06	8.94E-06
Acetaldehyde	2	94	0.00038	0.000008	4,368	0.035	1.77E-05	1.13E-04
Acrolein	2	94	0.00024	0.000005	4,368	0.022	1.12E-05	7.15E-05
Ammonia	2	94	0.3	0.006383	4,368	27.881	1.39E-02	8.94E-02
Ethyl benzene	2	94	0.00084	0.000018	4,368	0.078	3.90E-05	2.50E-04
Hexane	2	94	0.00056	0.000012	4,368	0.052	2.60E-05	1.67E-04
Toluene	2	94	0.00325	0.000069	4,368	0.302	1.51E-04	9.68E-04
Xylene	2	94	0.00241	0.000051	4,368	0.224	1.12E-04	7.18E-04

*Refer to Rule 2012A-3-25 HHV table

**Refer to SCAQMD EFs (Appendix A - Default EFs for Combustion Equipment)

HMA - Cold Feed RAP Emissions

Emission Point	Process	Throughput (tons/hr)	PM10 EF (lbs/ton)*	PM10 (lbs/hr)	PM2.5 EF (lbs/ton)	PM2.5 (lbs/hr)
Cold Feed						
	Loader to Aggregate Receivi	48.1	-	-	-	-
	Belt Feeder to Collecting Co	48.1	4.60E-05	2.21E-03	1.30E-05	6.25E-04
	Collecting Conveyer to Scree	48.1	4.60E-05	2.21E-03	1.30E-05	6.25E-04
	Screen	48.1	0.00074	3.56E-02	0.00005	2.40E-03
	Screen to Belt Conveyer	48.1	4.60E-05	2.21E-03	1.30E-05	6.25E-04
	Belt Conveyer to Dryer	48.1	4.60E-05	2.21E-03	1.30E-05	6.25E-04
RAP System**						
	Loader to RAP Hopper	-	-	-	-	-
	Belt Feeder to Collecting Co	-	4.60E-05	0	1.30E-05	0
	Collecting Conveyer to Scree	-	4.60E-05	0	1.30E-05	0
	Screen	-	0.00074	0	0.00005	0
	Screen to Belt Conveyer	-	4.60E-05	0	1.30E-05	0
	Belt Conveyer to Dryer	-	4.60E-05	0	1.30E-05	0
		TOTAL	9.24E-04	4.44E-02		

*Based on AP-42 Table 11.19.2-2

**The utilization of RAP corresponds to a reduction in like output of virgin aggregate being fed into the plant. As a result, production has been considered for only the cold feed.

Pollutant	Wt. Fraction Asphalt PM10 Dust	Emissions (lb/hr)	Emissions (lb/yr)
Aluminum	1.10E-01	4.89E-03	2.13E+01
Ammonia	3.39E-04	1.51E-05	6.58E-02
Antimony	1.00E-04	4.44E-06	1.94E-02
Barium	9.97E-04	4.43E-05	1.93E-01
Bromine	2.10E-05	9.33E-07	4.07E-03
Chlorine	8.61E-04	3.82E-05	1.67E-01
Chromium	5.60E-05	2.49E-06	1.09E-02
Copper	6.60E-05	2.93E-06	1.28E-02
Hex Chromium	2.80E-06	1.24E-07	5.43E-04
Lead	8.00E-06	3.55E-07	1.55E-03
Manganese	6.62E-04	2.94E-05	1.28E-01
Mercury	7.00E-06	3.11E-07	1.36E-03
Nickel	1.70E-05	7.55E-07	3.30E-03
Phosphorus	1.13E-03	5.02E-05	2.19E-01
Selenium	2.00E-06	8.88E-08	3.88E-04
Silica, Crystalline	2.64E-01	1.17E-02	5.12E+01
Sulfates	2.18E-03	9.68E-05	4.23E-01
Thallium	1.30E-05	5.78E-07	2.52E-03
Vanadium	1.80E-05	8.00E-07	3.49E-03
Zinc	5.60E-05	2.49E-06	1.09E-02

Emission factors derived from EPA Speciate profile 4082

HMA - Silo Filling Emissions

Pollutant	Annual Production (tons/year)	EF (lbs/ton)*	Control Factor*	Annual Emissions (lbs/year)	Annual Emissions (tons/year)
PM	150,000	0.00059	0.05	4.43	0.002
VOC	150,000	0.01219	-	1,828.05	0.914
CO	150,000	0.00118	-	177.00	0.089

Pollutant	AP-42 EF (%)	95% Eff. Blue Smoke	Organic PM EF (lbs/ton)	Annual Production (tons/year)	Toxic Emissions (lbs/yr)	Toxic Emissions (lbs/hr)
Acenapthene	0.470%	0.05	0.00059	150,000	2.08E-02	8.33E-06
Acenaphthylene	0.014%	0.05	0.00059	150,000	6.20E-04	2.48E-07
Anthracene	0.130%	0.05	0.00059	150,000	5.75E-03	2.30E-06
Benzo(a) anthracene	0.056%	0.05	0.00059	150,000	2.48E-03	9.93E-07
Benzo(e) pyrene	0.010%	0.05	0.00059	150,000	4.20E-04	1.68E-07
Chrysene	0.210%	0.05	0.00059	150,000	9.29E-03	3.72E-06
Fluoranthene	0.150%	0.05	0.00059	150,000	6.64E-03	2.66E-06
Fluorene	1.010%	0.05	0.00059	150,000	4.47E-02	1.79E-05
2-Methylnaphthalene	5.270%	0.05	0.00059	150,000	2.33E-01	9.34E-05
Naphthalene	1.820%	0.05	0.00059	150,000	8.05E-02	3.23E-05
Perylene	0.030%	0.05	0.00059	150,000	1.33E-03	5.32E-07
Phenanthrene	1.800%	0.05	0.00059	150,000	7.97E-02	3.19E-05
Pyrene	0.440%	0.05	0.00059	150,000	1.95E-02	7.80E-06
Benzene	0.032%	--	0.01219	150,000	5.85E-01	2.34E-04
Ethylbenzene	0.038%	--	0.01219	150,000	6.95E-01	2.78E-04
Formaldehyde	0.690%	--	0.01219	150,000	1.26E+01	5.05E-03
Styrene	0.005%	--	0.01219	150,000	9.87E-02	3.95E-05
Toluene	0.062%	--	0.01219	150,000	1.13E+00	4.54E-04
o-Xylene	0.057%	--	0.01219	150,000	1.04E+00	4.17E-04
Methylene Chloride	0.000%	--	0.01219	150,000	4.94E-03	1.98E-06

HMA - Silo Loadout Emissions

Pollutant	Annual Production (tons/year)	EF (lbs/ton)	Annual Emissions (lbs/year)	Annual Emissions (tons/year)
PM	150,000	0.00052	78.0	0.039
VOC	150,000	0.00416	623.9	0.312
CO	150,000	0.00135	202.4	0.101

Pollutant	AP-42 EF (%)	EF (lbs/ton)	Annual Production (tons/year)	Toxic Emissions (lbs/yr)	Toxic Emissions (lbs/hr)
Acenapthene	0.26%	0.00052	150,000	2.03E-01	8.13E-05
Acenaphthylene	0.03%	0.00052	150,000	2.18E-02	8.75E-06
Anthracene	0.07%	0.00052	150,000	5.46E-02	2.19E-05
Benzo(a) anthracene	0.02%	0.00052	150,000	1.48E-02	5.94E-06
Benzo(b) fluoranthene	0.01%	0.00052	150,000	5.93E-03	2.38E-06
Benzo(k) fluoranthene	0.00%	0.00052	150,000	1.72E-03	6.88E-07
Benzo(g,h,i) perylene	0.00%	0.00052	150,000	1.48E-03	5.94E-07
Benzo(a) pyrene	0.00%	0.00052	150,000	1.79E-03	7.19E-07
Benzo(e) pyrene	0.01%	0.00052	150,000	6.08E-03	2.44E-06
Chrysene	0.10%	0.00052	150,000	8.03E-02	3.22E-05
Dibenz(a,h) anthracene	0.00%	0.00052	150,000	2.89E-04	1.16E-07
Fluoranthene	0.05%	0.00052	150,000	3.90E-02	1.56E-05
Fluorene	0.77%	0.00052	150,000	6.01E-01	2.41E-04
Indeno(1,2,3-cd)pyrene	0.00%	0.00052	150,000	3.67E-04	1.47E-07
2-Methylnaphthalene	2.38%	0.00052	150,000	1.86E+00	7.44E-04
Naphthalene	1.25%	0.00052	150,000	9.75E-01	3.91E-04
Perylene	0.02%	0.00052	150,000	1.72E-02	6.88E-06
Phenanthrene	0.81%	0.00052	150,000	6.32E-01	2.53E-04
Pyrene	0.15%	0.00052	150,000	1.17E-01	4.69E-05
Benzene	0.05%	0.00052	150,000	4.06E-02	1.63E-05
Ethylbenzene	0.28%	0.00416	150,000	1.75E+00	7.00E-04
Formaldehyde	0.09%	0.00416	150,000	5.49E-01	2.20E-04
n-hexane	0.15%	0.00416	150,000	9.36E-01	3.75E-04
Styrene	0.01%	0.00416	150,000	4.55E-02	1.82E-05
Toluene	0.21%	0.00416	150,000	1.31E+00	5.25E-04
Trichlorofluromethane**	0.00%	0.00416	150,000	8.11E-03	3.25E-06
m-,p-Xylene	0.41%	0.00416	150,000	2.56E+00	1.02E-03
o-Xylene	0.08%	0.00416	150,000	4.99E-01	2.00E-04

HMA - Asphalt Oil Storage Tank Emissions

Tank Diameter	10.25	feet
Tank Length	48	feet
Total Asphalt Oil Throughput per Tank	750,000	gal/year
Total Facility Asphalt Oil	1,500,000	gal/year
Storage Volume	30,000	gal

	lbs/year	tons/year	lbs/day
VOC per tank	511.14	0.256	1.400
Total VOCS	1022.28	0.511	2.801

From EPA TANKS

Pollutant	Wt. Fraction Asphalt Storage VOC	Emissions (lb/hr)	Emissions (lb/yr)
Ethylbenzene	2.32E-02	0.00812	23.72
Naphthalene	6.53E-02	0.02286	66.75
O-xylene	3.73E-02	0.01306	38.13
Trimethylbenzene	8.95E-02	0.03133	91.49
Toluene	6.45E-02	0.02258	65.94
Xylene	8.56E-02	0.02997	87.51

From CARB Speciation Profiles 715, 716

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Asphalt Tank
City:	
State:	California
Company:	
Type of Tank:	Horizontal Tank
Description:	30,000 gallon tank

Tank Dimensions

Shell Length (ft):	48.00
Diameter (ft):	10.25
Volume (gallons):	30,000.00
Turnovers:	25.00
Net Throughput(gal/yr):	750,000.00
Is Tank Heated (y/n):	Y
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Asphalt Tank - Horizontal Tank
, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Asphalt Oil	All	350.00	300.00	400.00	400.00	0.1805	0.0532	0.5309	84.0000			1,000.00	
Benzene						139.4535	82.3153	220.5297	78.1100	0.0001	0.0036	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Formaldehyde						0.0083	0.0016	0.0296	30.0300	0.0012	0.0000	30.03	Option 2: A=4.28176, B=959.43, C=29.758
Naphthalene						5.3638	2.2954	11.2236	128.2000	0.0010	0.0020	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Unidentified Components						0.1796	0.1789	0.1789	83.9653	0.9977	0.9944	1,000.26	

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Asphalt Tank - Horizontal Tank
, California

Annual Emission Calcaulations	
Standing Losses (lb):	240.3879
Vapor Space Volume (cu ft):	2,522.7789
Vapor Density (lb/cu ft):	0.0017
Vapor Space Expansion Factor:	0.1569
Vented Vapor Saturation Factor:	0.9533
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	2,522.7789
Tank Diameter (ft):	10.2500
Effective Diameter (ft):	25.0350
Vapor Space Outage (ft):	5.1250
Tank Shell Length (ft):	48.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0017
Vapor Molecular Weight (lb/lb-mole):	84.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1805
Daily Avg. Liquid Surface Temp. (deg. R):	809.6700
Daily Average Ambient Temp. (deg. F):	65.4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	859.6700
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1569
Daily Vapor Temperature Range (deg. R):	100.0000
Daily Vapor Pressure Range (psia):	0.4777
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1805
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0532
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.5309
Daily Avg. Liquid Surface Temp. (deg R):	809.6700
Daily Min. Liquid Surface Temp. (deg R):	759.6700
Daily Max. Liquid Surface Temp. (deg R):	859.6700
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9533
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.1805
Vapor Space Outage (ft):	5.1250
Working Losses (lb):	270.7500
Vapor Molecular Weight (lb/lb-mole):	84.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1805
Annual Net Throughput (gal/yr.):	750,000.0000
Annual Turnovers:	25.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	10.2500
Working Loss Product Factor:	1.0000
Total Losses (lb):	511.1379

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Asphalt Tank - Horizontal Tank
, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Asphalt Oil	270.75	240.39	511.14
Benzene	0.97	0.87	1.84
Unidentified Components	269.23	239.04	508.27
Naphthalene	0.54	0.48	1.02
Formaldehyde	0.00	0.00	0.00

HMA - Storage Pile Emissions

Production Rate	Total PM EF (lbs/ton)*	Annual Emissions (lbs/year)	Annual Emissions (tons/year)	Emissions (lbs/hr)
150,000	0.0165	2,475.00	1.24	0.283

*Based on AP-42 Section 11.19.1 Table 4-1

Pollutant	Wt Fraction Aggregate*	Emissions (lbs/hr)	Emissions (lbs/yr)
Arsenic	2.00E-05	5.65E-06	4.95E-02
Beryllium	1.00E-06	2.83E-07	2.48E-03
Cadmium	1.00E-06	2.83E-07	2.48E-03
Chromium	5.00E-05	1.41E-05	1.24E-01
Copper	1.00E-04	2.83E-05	2.48E-01
Hexavalent Chromium	2.50E-06	7.06E-07	6.19E-03
Lead	5.00E-05	1.41E-05	1.24E-01
Manganese	5.00E-04	1.41E-04	1.24E+00
Nickel	2.00E-05	5.65E-06	4.95E-02
Selenium	5.00E-06	1.41E-06	1.24E-02
Zinc	2.00E-04	5.65E-05	4.95E-01

*From "DEFAULT VALUES - Material Storage" in December 1998 San Diego APCD document *Open Material Storage Areas*

Concrete Batch Plant - Batching Emissions

Process	Throughput (tons/hr)	PM10 EF (lbs/ton)	PM10 (lbs/hr)	Control Efficiency	Plant PM10 (lbs/hr)	Source
Truck Unloading to Load Feed Hopper	66.1	3.30E-03	2.18E-01	--	2.18E-01	AP 42 Section 11.12
Load Feed Hopper to Belt Conveyer 1	66.1	3.30E-03	2.18E-01	--	2.18E-01	AP 42 Section 11.12
Belt Conveyer 1 to Aggregate Bin	66.1	3.30E-03	2.18E-01	--	2.18E-01	AP 42 Section 11.12
Aggregate Bin to Aggregate Weigh Hopper	66.1	3.30E-03	2.18E-01	--	2.18E-01	AP 42 Section 11.12
Aggregate Weigh Hopper to Belt Conveyer 2	66.1	3.30E-03	2.18E-01	--	2.18E-01	AP 42 Section 11.12
Belt Conveyer to Truck Loading	66.1	3.10E-01	2.05E+01	99.9	2.05E-02	AP 42 Section 11.12
Cement Unloading to Storage Silos	26.0	4.70E-01	1.22E+01	99.9	1.22E-02	AP 42 Section 11.12
Fly Ash Unloading to Storage Silos	26.0	1.10E+00	2.86E+01	99.9	2.86E-02	AP 42 Section 11.13
Storage Silo 1 to Screw Conveyer	8.5	2.80E-03	2.37E-02	99.9	2.37E-05	AP 42 Section 11.12
Storage Silo 2 to Cement Weigh Hopper	8.5	2.80E-03	2.37E-02	99.9	2.37E-05	AP 42 Section 11.12
Screw Conveyer to Cement Weigh Hopper	8.5	2.80E-03	2.37E-02	99.9	2.37E-05	AP 42 Section 11.12
Cement Weigh Hopper to Truck Loading	8.5	3.10E-01	2.63E+00	99.9	2.63E-03	AP 42 Section 11.12
		Total	6.51E+01	Total	1.15E+00	

Process	Throughput (tons/hr)	Ar (lbs/hr)	Be (lbs/hr)	Cd (lbs/hr)	Cr (lbs/hr)	Pb (lbs/hr)	Mn (lbs/hr)	Ni (lbs/hr)	P (lbs/hr)	Se (lbs/hr)
Cement Silo Filling	26	4.37E-08	4.65E-10	6.08E-09	6.55E-09	1.91E-08	5.25E-06	4.58E-07	3.07E-07	--
Cement Supplement Silo Filling	26	2.60E-05	2.35E-06	5.15E-09	3.17E-05	1.35E-05	6.66E-06	5.93E-05	9.20E-05	1.88E-06
Truck Loading	74.6	9.10E-07	1.82E-08	2.55E-09	8.50E-07	2.70E-07	4.56E-06	8.87E-07	2.86E-06	1.95E-07

	Throughput (tons/hr)	Ar (lbs/yr)	Be (lbs/yr)	Cd (lbs/yr)	Cr (lbs/yr)	Pb (lbs/yr)	Mn (lbs/yr)	Ni (lbs/yr)	P (lbs/yr)	Se (lbs/yr)
Cement Silo Filling	26	1.91E-04	2.03E-06	2.66E-05	2.86E-05	8.36E-05	2.29E-02	2.00E-03	1.34E-03	--
Cement Supplement Silo Filling	26	1.14E-01	1.03E-02	2.25E-05	1.39E-01	5.91E-02	2.91E-02	2.59E-01	4.02E-01	8.22E-03
Truck Loading	74.6	3.97E-03	7.95E-05	1.11E-05	3.71E-03	1.18E-03	1.99E-02	3.88E-03	1.25E-02	8.53E-04

Concrete Batch Plant - Storage Pile Emissions

Production Rate	Total PM EF (lbs/ton)*	Annual Emissions (lbs/year)	Annual Emissions (tons/year)	Emissions (lbs/hr)
200,250	0.0165	3,304.13	1.65	0.377

*Based on AP-42 Section 11.19.1 Table 4-1

Pollutant	Wt Fraction Aggregate*	Emissions (lbs/hr)	Emissions (lbs/yr)
Arsenic	2.00E-05	7.54E-06	6.61E-02
Beryllium	1.00E-06	3.77E-07	3.30E-03
Cadmium	1.00E-06	3.77E-07	3.30E-03
Chromium	5.00E-05	1.89E-05	1.65E-01
Copper	1.00E-04	3.77E-05	3.30E-01
Hexavalent Chromium	2.50E-06	9.43E-07	8.26E-03
Lead	5.00E-05	1.89E-05	1.65E-01
Manganese	5.00E-04	1.89E-04	1.65E+00
Nickel	2.00E-05	7.54E-06	6.61E-02
Selenium	5.00E-06	1.89E-06	1.65E-02
Zinc	2.00E-04	7.54E-05	6.61E-01

*From "DEFAULT VALUES - Material Storage" in December 1998 San Diego APCD document *Open Material Storage Areas*

RAP - Storage Pile Emissions

Production Rate	Total PM EF (lbs/ton)*	Annual Emissions (lbs/year)	Annual Emissions (tons/year)	Emissions (lbs/hr)
39,000	0.0165	643.50	0.32	0.073

*Based on AP-42 Section 11.19.1 Table 4-1

Pollutant	Wt Fraction Aggregate*	Emissions (lbs/hr)	Emissions (lbs/yr)
Arsenic	2.00E-05	1.47E-06	1.29E-02
Beryllium	1.00E-06	7.35E-08	6.44E-04
Cadmium	1.00E-06	7.35E-08	6.44E-04
Chromium	5.00E-05	3.67E-06	3.22E-02
Copper	1.00E-04	7.35E-06	6.44E-02
Hexavalent Chromium	2.50E-06	1.84E-07	1.61E-03
Lead	5.00E-05	3.67E-06	3.22E-02
Manganese	5.00E-04	3.67E-05	3.22E-01
Nickel	2.00E-05	1.47E-06	1.29E-02
Selenium	5.00E-06	3.67E-07	3.22E-03
Zinc	2.00E-04	1.47E-05	1.29E-01

*From "DEFAULT VALUES - Material Storage" in December 1998 San Diego APCD document *Open Material Storage Areas*

RAP - RAP Processing Emissions

Process	Throughput (tons/hr)	PM10 EF (lbs/ton)	PM10 (lbs/hr)	PM10 (lbs/yr)
Loader to Impact Crusher	15.6	0.000046	0.0007	3.14
Impact Crusher	15.6	0.000540	0.0084	36.86
Impact Crusher to Stacker	15.6	0.000046	0.0007	3.14
Stacker to Stockpiles	15.6	0.000046	0.0007	3.14
	TOTAL	0.000678	0.0106	46.27

*Based on AP-42 Table 11.19.2-2

Pollutant	Wt. Fraction Asphalt PM10 Dust	Emissions (lb/hr)	Emissions (lb/yr)
Aluminum	1.10E-01	1.17E-03	5.09E+00
Ammonia	3.39E-04	3.59E-06	1.57E-02
Antimony	1.00E-04	1.06E-06	4.63E-03
Barium	9.97E-04	1.06E-05	4.61E-02
Bromine	2.10E-05	2.22E-07	9.72E-04
Chlorine	8.61E-04	9.12E-06	3.98E-02
Chromium	5.60E-05	5.93E-07	2.59E-03
Copper	6.60E-05	6.99E-07	3.05E-03
Hex Chromium	2.80E-06	2.97E-08	1.30E-04
Lead	8.00E-06	8.48E-08	3.70E-04
Manganese	6.62E-04	7.01E-06	3.06E-02
Mercury	7.00E-06	7.42E-08	3.24E-04
Nickel	1.70E-05	1.80E-07	7.87E-04
Phosphorus	1.13E-03	1.20E-05	5.23E-02
Selenium	2.00E-06	2.12E-08	9.25E-05
Silica, Crystalline	2.64E-01	2.80E-03	1.22E+01
Sulfates	2.18E-03	2.31E-05	1.01E-01
Thallium	1.30E-05	1.38E-07	6.02E-04
Vanadium	1.80E-05	1.91E-07	8.33E-04
Zinc	5.60E-05	5.93E-07	2.59E-03

All Plants - Diesel PM - Running Exhaust (non-idling)

Concrete Batch Plant

Vehicle	Pollutant	EF (lbs/ vehicle/ day)	Round Trip Distance (miles)	Annual Truck Trips	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
T7	PM10	0.00012976	2	6,760	1.75	0.0004
T6	PM10	0.00020062	2	10,400	4.17	0.0010
				Total	5.93	0.0014
				Sources	124	124
				Emissions per source	0.05	1.09E-05

HMA

Vehicle	Pollutant	EF (lbs/ vehicle/ day)	Round Trip Distance (miles)	Annual Truck Trips	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
T7	PM10	0.00012976	2	284	0.07	0.0000
T6	PM10	0.00020062	2	12,300	4.94	0.0011
				Total	5.01	0.0011
				Sources	131	131
				Emissions per source	0.04	8.75E-06

RAP

Vehicle	Pollutant	EF (lbs/ vehicle/ day)	Round Trip Distance (miles)	Annual Truck Trips	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
T7	PM10	0.00012976	2	2,860	0.74	0.0002
				Total	0.74	0.0002
				Sources	128	128
				Emissions per source	0.01	1.33E-06

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Air District
Region: SAN JOAQUIN VALLEY UNIFIED APCD
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories

Diesel PM for HRA

Model Input ID	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
CON	0.0478	1.09E-05
ASP	0.0382	8.75E-06
RAP	0.0058	1.33E-06
ALL	0.0918	2.10E-05
OFF	0.1837	4.20E-05
AR	0.0440	1.01E-05
AC	0.0860	1.97E-05

All Plants - Diesel PM - Idling

Concrete Batch Plant

Vehicle	Pollutant	EF (lbs/mile)	Annual Operating Days	Vehicles per Day	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
T7	PM10	0.00026078	312	22	1.79	0.0004
T6	PM10	6.1739E-05	312	33	0.64	0.0001
				Total	2.43	0.0006

HMA

Vehicle	Pollutant	EF (lbs/mile)*	Annual Operating Days	Vehicles per Day	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
T7	PM10	0.00026078	312	0.9	0.07	0.0000
T6	PM10	6.1739E-05	312	39	0.75	0.0002
				Total	0.82	0.0002

RAP

Vehicle	Pollutant	EF (lbs/mile)*	Annual Operating Days	Vehicles per Day	Annual Emissions (lbs/yr)	Emissions (lbs/hr)
T7	PM10	0.00026078	312	9	0.73	0.0002
				Total	0.73	0.0002

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Air District
Region: SAN JOAQUIN VALLEY UNIFIED APCD
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories

Attachment 2:

CalEEMod Emission Estimates

Dunn V2

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	50.00	1000sqft	1.15	50,000.00	0
Other Asphalt Surfaces	700.00	1000sqft	16.07	700,000.00	0

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.7 **Precipitation Freq (Days)** 45

Climate Zone 7 **Operational Year** 2021

Utility Company

CO2 Intensity (lb/MWhr) 0 **CH4 Intensity (lb/MWhr)** 0 **N2O Intensity (lb/MWhr)** 0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction expected to take approximately one year

Grading - Site is only 18 acres

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	174.00

tblGrading	AcresOfGrading	75.00	18.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.0104	4.1615	3.6614	0.0100	0.6096	0.1584	0.7680	0.2133	0.1480	0.3613	0.0000	906.2823	906.2823	0.1190	0.0000	909.2582
Maximum	**1.0104**	**4.1615**	**3.6614**	**0.0100**	**0.6096**	**0.1584**	**0.7680**	**0.2133**	**0.1480**	**0.3613**	**0.0000**	**906.2823**	**906.2823**	**0.1190**	**0.0000**	**909.2582**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.0104	4.1615	3.6614	0.0100	0.6096	0.1584	0.7680	0.2133	0.1480	0.3613	0.0000	906.2819	906.2819	0.1190	0.0000	909.2578
Maximum	**1.0104**	**4.1615**	**3.6614**	**0.0100**	**0.6096**	**0.1584**	**0.7680**	**0.2133**	**0.1480**	**0.3613**	**0.0000**	**906.2819**	**906.2819**	**0.1190**	**0.0000**	**909.2578**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-2-2020**	**4-1-2020**	1.5511	1.5511
2	**4-2-2020**	**7-1-2020**	1.2737	1.2737
3	**7-2-2020**	**9-30-2020**	1.2737	1.2737
		Highest	1.5511	1.5511

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2905	6.0000e-005	6.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0143
Energy	4.5300e-003	0.0412	0.0346	2.5000e-004		3.1300e-003	3.1300e-003		3.1300e-003	3.1300e-003	0.0000	44.8256	44.8256	8.6000e-004	8.2000e-004	45.0920
Mobile	0.0321	0.3523	0.3680	1.7800e-003	0.1105	1.6400e-003	0.1122	0.0297	1.5500e-003	0.0313	0.0000	164.6994	164.6994	9.4100e-003	0.0000	164.9348
Waste						0.0000	0.0000		0.0000	0.0000	12.5854	0.0000	12.5854	0.7438	0.0000	31.1799
Water						0.0000	0.0000		0.0000	0.0000	3.6683	0.0000	3.6683	0.3768	8.9000e-003	15.7384
Total	**0.3272**	**0.3935**	**0.4095**	**2.0300e-003**	**0.1105**	**4.7900e-003**	**0.1153**	**0.0297**	**4.7000e-003**	**0.0344**	**16.2537**	**209.5384**	**225.7921**	**1.1309**	**9.7200e-003**	**256.9594**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area	0.2905	6.0000e-005	6.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0143
Energy	4.5300e-003	0.0412	0.0346	2.5000e-004		3.1300e-003	3.1300e-003		3.1300e-003	3.1300e-003	0.0000	44.8256	44.8256	8.6000e-004	8.2000e-004	45.0920
Mobile	0.0321	0.3523	0.3680	1.7800e-003	0.1105	1.6400e-003	0.1122	0.0297	1.5500e-003	0.0313	0.0000	164.6994	164.6994	9.4100e-003	0.0000	164.9348
Waste						0.0000	0.0000		0.0000	0.0000	12.5854	0.0000	12.5854	0.7438	0.0000	31.1799
Water						0.0000	0.0000		0.0000	0.0000	3.6683	0.0000	3.6683	0.3768	8.9000e-003	15.7384
Total	**0.3272**	**0.3935**	**0.4095**	**2.0300e-003**	**0.1105**	**4.7900e-003**	**0.1153**	**0.0297**	**4.7000e-003**	**0.0344**	**16.2537**	**209.5384**	**225.7921**	**1.1309**	**9.7200e-003**	**256.9594**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/2/2020	1/15/2020	5	10	
2	Grading	Grading	1/16/2020	2/26/2020	5	30	
3	Building Construction	Building Construction	2/27/2020	10/27/2020	5	174	
4	Paving	Paving	10/28/2020	11/24/2020	5	20	
5	Architectural Coating	Architectural Coating	11/25/2020	12/22/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 18

Acres of Paving: 16.07

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 75,000; Non-Residential Outdoor: 25,000; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	315.00	123.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	63.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.8000e-004	3.8000e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9948	0.9948	3.0000e-005	0.0000	0.9955
Total	**5.3000e-004**	**3.8000e-004**	**3.8000e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9948**	**0.9948**	**3.0000e-005**	**0.0000**	**0.9955**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.8000e-004	3.8000e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.0000e-004	0.0000	0.9948	0.9948	3.0000e-005	0.0000	0.9955
Total	**5.3000e-004**	**3.8000e-004**	**3.8000e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9948**	**0.9948**	**3.0000e-005**	**0.0000**	**0.9955**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0999	0.0000	0.0999	0.0507	0.0000	0.0507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7264	81.7264	0.0264	0.0000	82.3872
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.0999**	**0.0326**	**0.1325**	**0.0507**	**0.0300**	**0.0807**	**0.0000**	**81.7264**	**81.7264**	**0.0264**	**0.0000**	**82.3872**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7700e-003	1.2800e-003	0.0127	4.0000e-005	3.7300e-003	3.0000e-005	3.7500e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	3.3160	3.3160	9.0000e-005	0.0000	3.3182
Total	**1.7700e-003**	**1.2800e-003**	**0.0127**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7500e-003**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**0.0000**	**3.3160**	**3.3160**	**9.0000e-005**	**0.0000**	**3.3182**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0999	0.0000	0.0999	0.0507	0.0000	0.0507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0668	0.7530	0.4794	9.3000e-004		0.0326	0.0326		0.0300	0.0300	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871
Total	**0.0668**	**0.7530**	**0.4794**	**9.3000e-004**	**0.0999**	**0.0326**	**0.1325**	**0.0507**	**0.0300**	**0.0807**	**0.0000**	**81.7263**	**81.7263**	**0.0264**	**0.0000**	**82.3871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7700e-003	1.2800e-003	0.0127	4.0000e-005	3.7300e-003	3.0000e-005	3.7500e-003	9.9000e-004	2.0000e-005	1.0100e-003	0.0000	3.3160	3.3160	9.0000e-005	0.0000	3.3182
Total	**1.7700e-003**	**1.2800e-003**	**0.0127**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7500e-003**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**0.0000**	**3.3160**	**3.3160**	**9.0000e-005**	**0.0000**	**3.3182**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1844	1.6692	1.4658	2.3400e-003		0.0972	0.0972		0.0914	0.0914	0.0000	201.5007	201.5007	0.0492	0.0000	202.7297
Total	**0.1844**	**1.6692**	**1.4658**	**2.3400e-003**		**0.0972**	**0.0972**		**0.0914**	**0.0914**	**0.0000**	**201.5007**	**201.5007**	**0.0492**	**0.0000**	**202.7297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0399	1.2482	0.2358	2.8200e-003	0.0642	6.5400e-003	0.0707	0.0185	6.2600e-003	0.0248	0.0000	267.9144	267.9144	0.0226	0.0000	268.4805
Worker	0.1613	0.1166	1.1585	3.3500e-003	0.3407	2.3300e-003	0.3430	0.0905	2.1400e-003	0.0927	0.0000	302.9117	302.9117	8.3600e-003	0.0000	303.1209
Total	**0.2013**	**1.3648**	**1.3944**	**6.1700e-003**	**0.4048**	**8.8700e-003**	**0.4137**	**0.1091**	**8.4000e-003**	**0.1175**	**0.0000**	**570.8262**	**570.8262**	**0.0310**	**0.0000**	**571.6013**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1844	1.6692	1.4658	2.3400e-003		0.0972	0.0972		0.0914	0.0914	0.0000	201.5005	201.5005	0.0492	0.0000	202.7294
Total	**0.1844**	**1.6692**	**1.4658**	**2.3400e-003**		**0.0972**	**0.0972**		**0.0914**	**0.0914**	**0.0000**	**201.5005**	**201.5005**	**0.0492**	**0.0000**	**202.7294**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0399	1.2482	0.2358	2.8200e-003	0.0642	6.5400e-003	0.0707	0.0185	6.2600e-003	0.0248	0.0000	267.9144	267.9144	0.0226	0.0000	268.4805
Worker	0.1613	0.1166	1.1585	3.3500e-003	0.3407	2.3300e-003	0.3430	0.0905	2.1400e-003	0.0927	0.0000	302.9117	302.9117	8.3600e-003	0.0000	303.1209
Total	**0.2013**	**1.3648**	**1.3944**	**6.1700e-003**	**0.4048**	**8.8700e-003**	**0.4137**	**0.1091**	**8.4000e-003**	**0.1175**	**0.0000**	**570.8262**	**570.8262**	**0.0310**	**0.0000**	**571.6013**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	0.0211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0346**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1902**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	6.4000e-004	6.3400e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6580	1.6580	5.0000e-005	0.0000	1.6591
Total	**8.8000e-004**	**6.4000e-004**	**6.3400e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8800e-003**	**5.0000e-004**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**1.6580**	**1.6580**	**5.0000e-005**	**0.0000**	**1.6591**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	0.0211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0346**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1901**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	6.4000e-004	6.3400e-003	2.0000e-005	1.8600e-003	1.0000e-005	1.8800e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6580	1.6580	5.0000e-005	0.0000	1.6591
Total	**8.8000e-004**	**6.4000e-004**	**6.3400e-003**	**2.0000e-005**	**1.8600e-003**	**1.0000e-005**	**1.8800e-003**	**5.0000e-004**	**1.0000e-005**	**5.1000e-004**	**0.0000**	**1.6580**	**1.6580**	**5.0000e-005**	**0.0000**	**1.6591**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	0.4936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**0.4961**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	2.6800e-003	0.0266	8.0000e-005	7.8300e-003	5.0000e-005	7.8800e-003	2.0800e-003	5.0000e-005	2.1300e-003	0.0000	6.9635	6.9635	1.9000e-004	0.0000	6.9683
Total	**3.7100e-003**	**2.6800e-003**	**0.0266**	**8.0000e-005**	**7.8300e-003**	**5.0000e-005**	**7.8800e-003**	**2.0800e-003**	**5.0000e-005**	**2.1300e-003**	**0.0000**	**6.9635**	**6.9635**	**1.9000e-004**	**0.0000**	**6.9683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4936					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**0.4961**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7100e-003	2.6800e-003	0.0266	8.0000e-005	7.8300e-003	5.0000e-005	7.8800e-003	2.0800e-003	5.0000e-005	2.1300e-003	0.0000	6.9635	6.9635	1.9000e-004	0.0000	6.9683
Total	**3.7100e-003**	**2.6800e-003**	**0.0266**	**8.0000e-005**	**7.8300e-003**	**5.0000e-005**	**7.8800e-003**	**2.0800e-003**	**5.0000e-005**	**2.1300e-003**	**0.0000**	**6.9635**	**6.9635**	**1.9000e-004**	**0.0000**	**6.9683**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0321	0.3523	0.3680	1.7800e-003	0.1105	1.6400e-003	0.1122	0.0297	1.5500e-003	0.0313	0.0000	164.6994	164.6994	9.4100e-003	0.0000	164.9348
Unmitigated	0.0321	0.3523	0.3680	1.7800e-003	0.1105	1.6400e-003	0.1122	0.0297	1.5500e-003	0.0313	0.0000	164.6994	164.6994	9.4100e-003	0.0000	164.9348

4.2 Trip Summary Information

	Average Daily Trip Rate	Unmitigated	Mitigated

Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	75.00	75.00	75.00	289,760	289,760
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	75.00	75.00	75.00	289,760	289,760

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.506092	0.032602	0.169295	0.124521	0.019914	0.005374	0.021664	0.110051	0.001797	0.001623	0.005307	0.000969	0.000792
Other Asphalt Surfaces	0.506092	0.032602	0.169295	0.124521	0.019914	0.005374	0.021664	0.110051	0.001797	0.001623	0.005307	0.000969	0.000792

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	4.5300e-003	0.0412	0.0346	2.5000e-004		3.1300e-003	3.1300e-003		3.1300e-003	3.1300e-003	0.0000	44.8256	44.8256	8.6000e-004	8.2000e-004	45.0920

NaturalGas Unmitigated	4.5300e-003	0.0412	0.0346	2.5000e-004		3.1300e-003	3.1300e-003		3.1300e-003	3.1300e-003	0.0000	44.8256	44.8256	8.6000e-004	8.2000e-004	45.0920

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	840000	4.5300e-003	0.0412	0.0346	2.5000e-004		3.1300e-003	3.1300e-003		3.1300e-003	3.1300e-003	0.0000	44.8256	44.8256	8.6000e-004	8.2000e-004	45.0920
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.5300e-003**	**0.0412**	**0.0346**	**2.5000e-004**		**3.1300e-003**	**3.1300e-003**		**3.1300e-003**	**3.1300e-003**	**0.0000**	**44.8256**	**44.8256**	**8.6000e-004**	**8.2000e-004**	**45.0920**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	840000	4.5300e-003	0.0412	0.0346	2.5000e-004		3.1300e-003	3.1300e-003		3.1300e-003	3.1300e-003	0.0000	44.8256	44.8256	8.6000e-004	8.2000e-004	45.0920
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.5300e-003**	**0.0412**	**0.0346**	**2.5000e-004**		**3.1300e-003**	**3.1300e-003**		**3.1300e-003**	**3.1300e-003**	**0.0000**	**44.8256**	**44.8256**	**8.6000e-004**	**8.2000e-004**	**45.0920**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	118000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	118000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.2905	6.0000e-005	6.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0143
Unmitigated	0.2905	6.0000e-005	6.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0143

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0494					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2405					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.5000e-004	6.0000e-005	6.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0143
Total	**0.2905**	**6.0000e-005**	**6.9200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0134**	**0.0134**	**4.0000e-005**	**0.0000**	**0.0143**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0494					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2405					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.5000e-004	6.0000e-005	6.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0134	0.0134	4.0000e-005	0.0000	0.0143
Total	**0.2905**	**6.0000e-005**	**6.9200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0134**	**0.0134**	**4.0000e-005**	**0.0000**	**0.0143**

7.0 Water Detail

7.1 Mitigation Measures Water

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.6683	0.3768	8.9000e-003	15.7384
Unmitigated	3.6683	0.3768	8.9000e-003	15.7384

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
General Heavy Industry	11.5625 / 0	3.6683	0.3768	8.9000e-003	15.7384
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.6683**	**0.3768**	**8.9000e-003**	**15.7384**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	11.5625 / 0	3.6683	0.3768	8.9000e-003	15.7384
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.6683**	**0.3768**	**8.9000e-003**	**15.7384**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.5854	0.7438	0.0000	31.1799
Unmitigated	12.5854	0.7438	0.0000	31.1799

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	62	12.5854	0.7438	0.0000	31.1799
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**12.5854**	**0.7438**	**0.0000**	**31.1799**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	62	12.5854	0.7438	0.0000	31.1799
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**12.5854**	**0.7438**	**0.0000**	**31.1799**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX A.3

AUTHORITY TO CONSTRUCT APPLICATIONS

ALTA ENVIRONMENTAL
3777 LONG BEACH BLVD, ANNEX BUILDING. LONG BEACH CA 90807
altaenviron.com o.562.495.5777 f.562.495.5877

September 6, 2019

Dunn's Inc.
303 N. Ben Maddox Way
Visalia, 93292

Attention: Mark Dunn

Subject: San Joaquin Valley APCD Hot Mix Asphalt Plant Permit Application

Dear Mark:

Enclosed is your copy and the original permit application package for your hot mix asphalt plant with San Joaquin Valley APCD.

Please sign the originals and forward the original to the San Joaquin Valley APCD, along with a check in the amount of $87.00 to cover the filing fee. In addition, every applicant who files an application for an Authority to Construct or a Permit to Operate with the District shall pay an engineering evaluation fee for the processing of the application. The fee shall be calculated using the staff hours expended and the prevailing weighted labor rate. All filing fees paid shall be credited towards the evaluation fee.

If you have any questions, please feel free to call me at (562) 495-5777.

Sincerely,

Diana Nguyen
Alta Environmental

September 6, 2019

San Joaquin Valley Air Pollution Control District
1900 East Gettysburg Avenue
Fresno, CA 93726-0244

Attention: Permit Services

Subject: Dunn's Inc.
Hot Mix Asphalt Plant Permit Application

Attached you will find the application package which covers the permit to construct for Dunn's Inc. hot mix asphalt plant. You will also find a check in the amount of $87.00 to cover the filing fees.

We trust the information provided will allow you to complete your evaluation. If you have any questions, please feel free to give us a call at (562) 495-5777.

Best Regards,

Diana Nguyen
Alta Environmental

cc: Mark Dunn, Dunn's Inc.

Alta Environmental an NV5 Company
3777 Long Beach Boulevard, Annex Building
Long Beach, CA 90807
T: (562) 495-5777 F: (562) 495-5877

FEE SCHEDULE WORK SHEET

(For Permit Processing in Accordance With Rule 3010)

Permits to be issued to: Dunn's Inc.

Address: 303 N. Maddox Way

City, State, Zip: Visalia, CA 93292

Quantity of Identical Units	Equipment/Process	Fee Schedule	Permit Application Fee	=	Total
1	Hot mix asphalt plant	--	$87.00	=	$87.00
		--		=	

Total Permit Processing Fee Due $87.00

Comments:

ALTA
ENVIRONMENTAL
AN NV5 COMPANY

PERMIT TO CONSTRUCT FOR A HOT MIX ASPHALT PLANT

Prepared For:

Dunn's Inc.
303 N. Ben Maddox Way
Visalia, CA 93292

Project No.: DUNN-19-8904
Contact: Diana Nguyen
Date: September 6, 2019

Alta Environmental an NV5 Company
3777 Long Beach Boulevard Annex Building
Long Beach, CA 90807 United States of America
T: 562-495-5777 F: 562-495-5877
www.altaenviron.com

SUMMARY

Dunn's Equipment, Inc. (Dunn's Inc.) is requesting a Permit to Construct a hot mix asphalt (HMA) plant. This plant will be powered by electric grid power. This application will show that the emissions are less than the District's Rule 2201 (4.5.3) annual thresholds therefore exempting the plant from offsets. The plant emissions are below the District's Rule 2201 (5.4) daily public notice thresholds for all pollutants.

This plant will be equipped with the Best Available Control Technology (BACT) in compliance with the District's New Source Review Regulation.

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PART I – PROJECT DESCRIPTION

A. Business Background

1. Name

   Dunn's Inc.

2. Owner

   Dunn's Inc.
   303 N. Ben Maddox Way
   Visalia, CA 93292

3. Contact

   Mark Dunn
   (559) 734-5373

4. Entitlement

   Equipment to be owned and operated by Dunn's Inc.

5. Business Description

   Hot Mix Asphalt Plant

B. Type of Application

Permit to Construct

C. Description of Facility

1. Location

   7763 Avenue 280
   Visalia, CA 93277

2. General Purpose of Facility

   The proposed facility will produce hot mix asphalt (HMA) for wholesale delivery to the construction industries for use in paving streets and highways.

D. Description of Process

1. General Description of each Process Line

   a.) Hot Mix Asphalt Plant

   The facility will produce HMA to be used in paving of streets and highways.

   Aggregate (which can include reclaimed asphalt pavement [RAP]) is mixed with liquid asphalt cement, which is heated and mixed in measured quantities to produce HMA. HMA is loaded into transport trucks for use at construction sites.

2. Flow Diagram

   Refer to figure 1. This diagram illustrates the HMA plant and shows the interaction between process lines, transfer of materials, and basic control equipment.

3. Maximum Production Schedule

   The HMA plant will produce a maximum of 481 tons of asphalt per day and 150,000 tons per year.

4. Equipment List and Horsepower Schedule

(Refer to Flow Diagram Figure 1)

Item	Description	HP
1-5	10' × 14' Cold Feed Bins	--
6-10	30" × 7' 6" Belt Feeders	7.5 Each
11	30" Collecting Conveyor	15
12	5' × 10' Vibrating Screen	7.5
13	30" × 70' Belt Conveyor	20
14	Gencor Ultradrum an Equinox – 135 Burner (135 mmBTU/hour)/WFGR and Ultrafoam 6 × 2 Warm Mix System	105
15	Drag Slat Conveyor	100
16	200 Ton Asphalt Silos w /Batcher	--
18-19	10' × 15' RAP Hoppers	--
20-21	Feed Conveyor	15
22	30” × 52' Collecting Conveyor	10
23	4' × 10' Screen	5
24	24” × 70' RAP Belt Conveyor	10
25	2.0 mmBTU/hour Hot Oil Heater Indirect Fired, Powerflame NOVA #2	15
26	30,000 Gallon Asphalt Cement Tank	--
27	30,000 Gallon Split (15K/15K) Asphalt Cement Tank	--
28	Baghouse Model CFR-182 Rated at 89,217 CFM w/18,134 Sq. Ft. of Cloth	250
29	3 Screw Conveyors (Internal to Baghouse)	22.5
30	1 Screw Conveyor, Cross	7.50
31	600 Gallon 0.1 Calibration Tank	--
32	200 Ton Asphalt Silos w /Batcher	--

E. Control Equipment

1. Particulate Matter Control

The District New Source Review Regulation specifies that new equipment will be in compliance with the BACT guidelines.

Material will be kept sufficiently moist to control particulate via the use of water spray.

PART II – REGULATORY ANALYSIS

A. Analysis of Emissions Restrictions

District prohibitory rules limit the emissions of various pollutants from all sources in the District. The specific rules that apply to the proposed project are discussed below. The limitations in these rules will be met through the application of BACT. BACT requirements are discussed in detail in Section "B" of this part of the application.

1. Fugitive Dust

No person shall perform any outdoor handling, storage and transport of bulk materials unless the appropriate control measures are sufficiently implemented to limit visible dust emissions to 20% opacity as set forth in Rule 8031 and Table 8031-1. Compliance with the rule will be achieved through the use of water.

2. Rule 4101 Visible Emissions

The opacity of visible emissions will be limited by Rule 4101 not to exceed No. 1 of the United States Bureau of Mines Ringelmann Chart, or to the equivalent opacity. Ringelmann No. 1 corresponds to 20% opacity. Since BACT will limit opacity of 5%, compliance with Rule 4101 will be achieved.

3. Rule 4001 New Source Performance Standards (NSPS)

This facility is subject to the requirements of NSPS Subpart OOO, Nonmetallic Mineral Processing Plants. This facility will demonstrate compliance with the performance standards of Subpart OOO within 60 days of reaching maximum production, but no later than 180 days after start-up.

The affected facilities will be manufactured after April 22, 2008, therefore are subject to 7% opacity for belts and screens and 10% opacity for belt conveyors.

4. Rule 4102 Public Nuisance

No person shall discharge from any source whatsoever such quantities of air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger to comfort, repose, health or safety of any such person or the public, or which cause or have a natural tendency to cause injury or damage to business or property.

This operation is not expected to produce a public nuisance or annoyance.

5. Federally-Mandated Operation Permit

Since this facility's potential emissions do not exceed any major source thresholds per year per Rule 2201, this facility is not a major source, and Rule 2520 does not apply (See Part III (D) of the application).

6. Rule 4641 Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

The current Rule 4641 was implemented December 17, 1992 and has remained unchanged since that time. To comply with this rule the asphalt oil manufactures have developed and only produce materials which are compliant with this rule. Therefore, this site will use binders that are compliant with Rule 4641.

7. Rule 4309 Burners

Rule 4309 requires asphalt plant burners to achieve a NOx PPM of 4.3 @ 19% O2 and a CO PPM of 42 @ 19% O2. Equipment purchased for this facility will be selected to meet these applicable emission limits.

B. Analysis of New Source Review Requirements/BACT

In accordance with the requirements of Rule 2201.4.1, (BACT), Dunn's Inc has identified the BACT measures that apply to the facility.

1. Aggregate Piles
2. Transfer Points

   Water sprays will be used to minimize particulate emissions from transfer points between conveyors and other loading operations when necessary.

C. Offsets

Since this facility is below the offset threshold as in Rule 2201, Section 4.5.3, no offsets will be required (See Part III (C) of the application).

D. Public Notification

None of the daily emissions from criteria pollutants will be above 100 pounds per day. Therefore, public notice will not be necessary according to Rule 2201, Section 5.4 (See Part III (C) of the application).

PART III – ESTIMATED EMISSIONS

A. Emissions Estimates for Hot Mix Asphalt Plant

The emissions estimates for the Hot Mix Asphalt Plant were calculated below. The emissions factors were taken from EPA AP-42 Table 11.1-3 and 11.19.2-2 (Refer to Attachment "A").

The utilization of RAP corresponds to a reduction in like output of virgin aggregate being fed into the plant. As a result, production has been considered for only the cold feed.

Cold Feed

Emission Point	Description	Throughput (tons/hour)	×	PM_{10} Emissions Factor (lbs/ton)	=	PM_{10} (lbs/hour)
1	Loader to Aggregate Receiving Hopper	500		-		-
2	Belt Feeder to Collecting Conveyer	200		4.60E-05		2.76E-03
3	Collecting Conveyer to Screen	200		4.60E-05		2.76E-03
4	Screen	500		0.00074		4.45E-02
5	Screen to Belt Conveyer	500		4.60E-05		2.76E-03
6	Belt Conveyer to Dryer	500		4.60E-05		2.76E-03
		Total PM_{10} Emissions (lb/hour)				0.056
		Aggregate Throughput (tons/hour)			÷	60.1
		Plant PM_{10} Emission Factor (lbs/ton)				9.24E-04

Aggregate Throughput		×	PM_{10} Emissions Rate (lbs/ton)	=	PM_{10} Emissions	
480.8	tons/day		9.24E-04		0.44	lbs/day
150,000	tons/year		9.24E-04		138	lbs/year

A. Emissions Estimates for Hot Mix Asphalt Plant *(Continued)*

Dryer

Pollutant	Production (tons/year)	×	Emissions Factor (lbs/ton)	=	PM_{10} Max Emissions (lbs/year)	=	PM_{10} (lbs/day)
PM_{10}	150,000		0.023		3450		11.1

AP-42 11.1 does not provide additional EFs for criteria and toxic pollutants for propane dryers; therefore, default South Coast Air Quality Management District (SCAQMD) EFs are used as follows (Refer to Attachment "B").

Criteria Pollutants

Pollutant	Hot Oil Heat Requirement (mmBTU/hr)	/	Propane Heating Value (mmBTU/mgal)	×	EF (lbs/mgal)	=	Hourly Emissions (lbs/hr)	×	Operating Schedule (hours/year)	=	Emissions (lbs/year)	=	Emissions (lbs/day)
VOC	135		94		0.26		0.37		4368		1.63E+03		5.2
SOx	135		94		4.6		6.61		4368		2.89E+04		92.5
NOx	135		94		0.49[1]		0.70		4368		3.07E+03		9.9
CO	135		94		2.92[1]		4.19		4368		1.83E+04		58.7

[1] Emission factors for NOx and CO are based on SJVAPCD emission limits. See conversions in Attachment “C”.

A. Emissions Estimates for Hot Mix Asphalt Plant *(Continued)*

Toxic Pollutants

Pollutant	Hot Oil Heat Requirement (mmBTU/hr)	/	Propane Heating Value (mmBTU/mgal)	×	EF (lbs/mgal)	=	Hourly Emissions (lbs/hr)	×	Operating Schedule (hours/year)	=	Emissions (lbs/year)	=	Emissions (lbs/day)
Benzene	135		94		1.50E-04		2.15E-04		4368		9.41E-01		3.02E-03
Formaldehyde	135		94		3.20E-04		4.60E-04		4368		2.01E+00		6.43E-03
PAHs	135		94		1.00E-05		1.44E-05		4368		6.27E-02		2.01E-04
Naphthalene	135		94		3.00E-05		4.31E-05		4368		1.88E-01		6.03E-04
Acetaldehyde	135		94		8.00E-05		1.15E-04		4368		5.02E-01		1.61E-03
Acrolein	135		94		7.00E-05		1.01E-04		4368		4.39E-01		1.41E-03
Ammonia	135		94		3.00E-01		4.31E-01		4368		1.88E+03		6.03E+00
Ethyl benzene	135		94		1.80E-04		2.59E-04		4368		1.13E+00		3.62E-03
Hexane	135		94		1.20E-04		1.72E-04		4368		7.53E-01		2.41E-03
Toluene	135		94		6.90E-04		9.91E-04		4368		4.33E+00		1.39E-02
Xylene	135		94		5.10E-04		7.32E-04		4368		3.20E+00		1.03E-02

A. Emissions Estimates for Hot Mix Asphalt Plant *(Continued)*

Oil Heater

Criteria Pollutants

Pollutant	Hot Oil Heat Requirement (mmBTU/hr)	/	Propane Heating Value (mmBTU/mgal)	×	SCAQMD EF (lbs/mgal)	=	Emission Factor (lbs/hr)	×	Operating Schedule (hours/year)	=	Emissions (lbs/year)	=	Emissions (lbs/day)
PM_{10}	2		94		0.28		0.006		4368		26.0		0.08
VOC	2		94		0.26		0.006		4368		24.2		0.08
SOx	2		94		4.6		0.098		4368		427.5		1.37
NOx	2		94		0.49[1]		0.010		4368		45.5		0.15
CO	2		94		2.92[1]		0.062		4368		271.4		0.87

[1] Emission factors for NOx and CO are based on SJVAPCD emission limits. See conversions in Attachment "C".

Toxic Pollutants

Pollutant	Hot Oil Heat Requirement (mmBTU/hr)	/	Propane Heating Value (mmBTU/mgal)	×	SCAQMD EF (lbs/mgal)	=	Emission Factor (lbs/hr)	×	Operating Schedule (hours/year)	=	Emissions (lbs/year)	=	Emissions (lbs/day)
Benzene	2		94		7.10E-04		1.51E-05		4368		6.60E-02		2.11E-04
Formaldehyde	2		94		1.51E-03		3.21E-05		4368		1.40E-01		4.50E-04
PAHs	2		94		1.00E-05		2.13E-07		4368		9.29E-04		2.98E-06
Naphthalene	2		94		3.00E-05		6.38E-07		4368		2.79E-03		8.94E-06
Acetaldehyde	2		94		3.80E-04		8.09E-06		4368		3.53E-02		1.13E-04
Acrolein	2		94		2.40E-04		5.11E-06		4368		2.23E-02		7.15E-05
Ammonia	2		94		0.3		6.38E-03		4368		2.79E+01		8.94E-02
Ethyl benzene	2		94		8.40E-04		1.79E-05		4368		7.81E-02		2.50E-04
Hexane	2		94		5.60E-04		1.19E-05		4368		5.20E-02		1.67E-04
Toluene	2		94		3.25E-03		6.91E-05		4368		3.02E-01		9.68E-04
Xylene	2		94		2.41E-03		5.13E-05		4368		2.24E-01		7.18E-04

A. Emissions Estimates for Hot Mix Asphalt Plant *(Continued)*

VOC Emissions for Asphalt Storage Tank

Emissions from the two 30,000-gallon asphalt storage tanks were calculated using the procedures described in EPA AP-42, Section 7.1, Organic Liquid Storage Tanks and by utilizing EPA TANKS 4.0.9d. EPA TANKS software was used to determine the annual VOC emissions from working losses and breathing losses. The asphalt tanks are equipped with a vent condenser which has a control efficiency of 95% on blue smoke emissions based on EPA AP-42, Section 7.1, Organic Liquid Storage Tanks, Fixed Roof. This control efficiency was added into the storage tank emissions. The following parameters were used in the program (Refer to Attachment “D” for TANKS output).

EPA Tank Parameters (Baseline)

Tank Diameter:	10’ 4"
Tank Length:	48 Feet
Total Asphalt Oil Throughput per tank:	750,000 Gallons Per Year
Total Facility Asphalt Oil:	1,500,000 Gallons Per Year
Storage Volume:	30,000 Gallons

The following are baseline VOC emission estimates from the TANKS program.

VOC (lbs/year/tank)	=	511.14 lbs/year ÷ 2,000 lbs/year 0.256 tons/year/tank × (1-0.95 CF) = 0.013 tons/year/tank
Total VOCs (lbs/year)	=	511.14 lbs/year × 2 tanks × (1-0.95 CF) 51.11 lbs/year ÷ 2,000 lbs/year 0.026 tons/year
VOC (lbs/day/tank)	=	511.14 lbs/year ÷ 365 days/year × (1-0.95 CF) 0.070 lbs/day/tank
Total VOCs (lbs/day)	=	0.070 lbs/day × 2 tanks 0.140 lbs/day

B. Stockpiles

There will be a total of 0.5 acres of stockpile area. In accordance with San Joaquin Valley aggregate plant processing policy SSP-1610-10, 80% control will be used for water.

Total (Acres)	×	PM_{10} Emission Factor (lb/acre-day)	×	Control Factor	=	PM_{10} Daily Emissions (lb/day)
0.5		5.27		0.2		0.527

Daily PM_{10} Emissions (lb/day)	×	Operating Schedule (days/yr)	=	PM_{10} Yearly Emissions (lb/yr)	=	PM_{10} Daily Emissions (tons/yr)
0.527		365		192		0.096

C. Facility Emissions Summary/Emissions Rule Evaluation

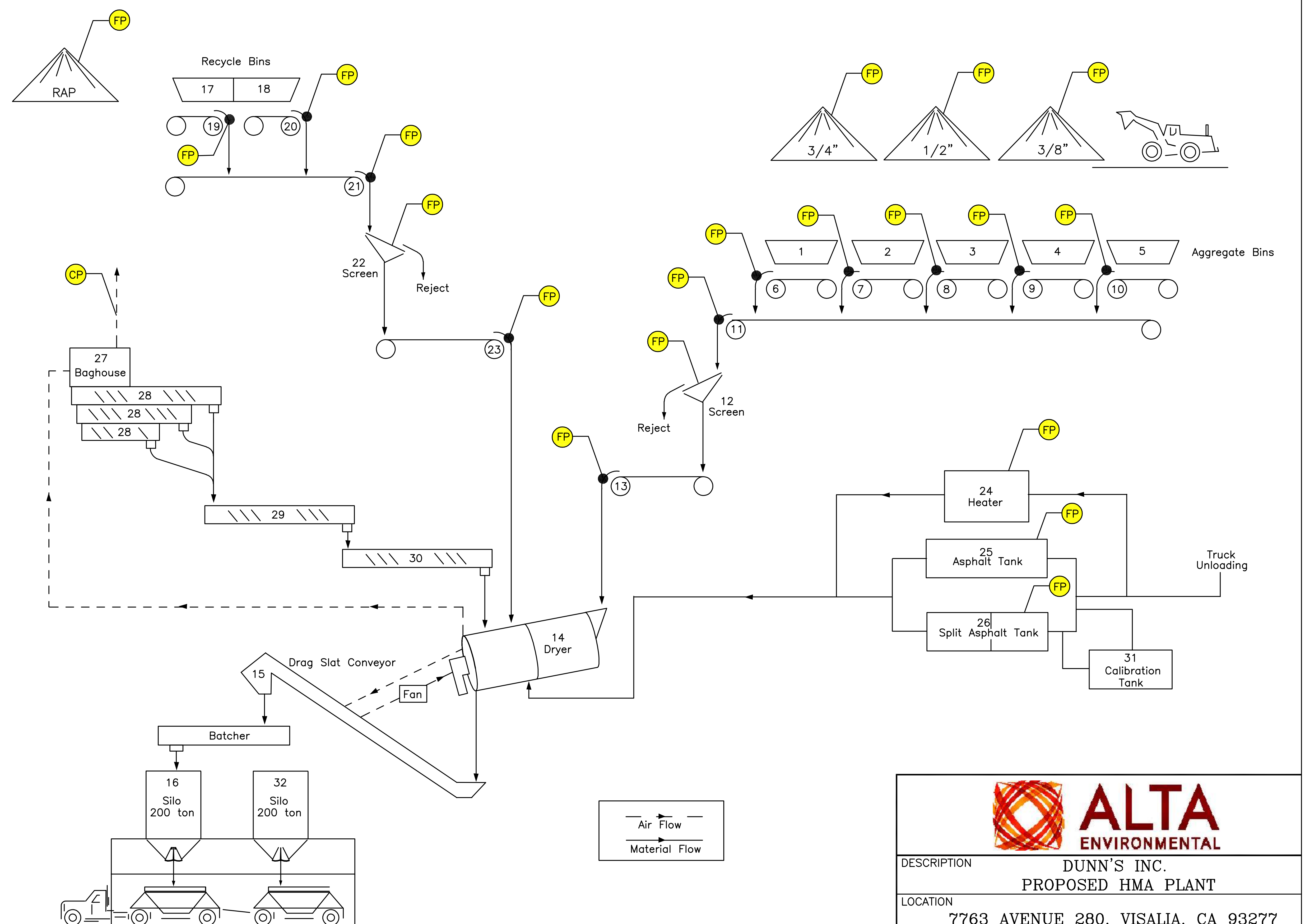
Pollutant	Aggregate Emissions (lbs/day)	+	Dryer + Oil Heater Emissions (lbs/day)	+	Stockpile (lbs/day)	=	Overall Emissions (lbs/day)	≤	Rule 2201 5.4 Public Notice Limit (lbs/day)
PM_{10}	0.44		11.2		0.53		12.2	<	100

Pollutant	Aggregate Emissions (lbs/year)	+	Dryer + Oil Heater Emissions (lbs/year)	+	Stockpile (lbs/year)	=	Overall Emissions (lbs/year)	=	Overall Emissions (tons/year)	≤	Rule 2201 4.5.3 Offset Limits (tons/year)
PM_{10}	138		3,476		192		3,806		1.90	<	14.6

PART IV – ANALYSIS OF PERMIT RESTRICTIONS

Anticipated production and fuel limits are listed below:

Hot Mix Asphalt production through the plant will be limited to 481 tons per day and 150,000 tons per year.



ALTA ENVIRONMENTAL	
DESCRIPTION	DUNN'S INC. PROPOSED HMA PLANT
LOCATION	7763 AVENUE 280, VISALIA, CA 93277

JOB NO.	DATE	FIGURE NO.
DUNN-19-8904	9/3/2019	FIGURE 1

ATTACHMENT "A"

AP-42 EMISSION FACTORS
(TABLES 11.1-3 AND 11.19.2-2)

Table 11.1-3. PARTICULATE MATTER EMISSION FACTORS FOR DRUM MIX HOT MIX ASPHALT PLANTS[a]

	Filterable PM				Condensable PM[b]				Total PM			
Process	PM[c]	EMISSION FACTOR RATING	PM-10[d]	EMISSION FACTOR RATING	Inorganic	EMISSION FACTOR RATING	Organic	EMISSION FACTOR RATING	PM[e]	EMISSION FACTOR RATING	PM-10[f]	EMISSION FACTOR RATING
Dryer[g] (SCC 3-05-002-05,-55 to -63)												
Uncontrolled	28[h]	D	6.4	D	0.0074[j]	E	0.058[k]	E	28	D	6.5	D
Venturi or wet scrubber	0.026[m]	A	ND	NA	0.0074[n]	A	0.012[p]	A	0.045	A	ND	NA
Fabric filter	0.014[q]	A	0.0039	C	0.0074[n]	A	0.012[p]	A	0.033	A	0.023	C

[a] Factors are lb/ton of product. SCC = Source Classification Code. ND = no data. NA = not applicable. To convert from lb/ton to kg/Mg, multiply by 0.5.

[b] Condensable PM is that PM collected using an EPA Method 202, Method 5 (analysis of "back-half" or impingers), or equivalent sampling train.

[c] Filterable PM is that PM collected on or before the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Particle size data from Reference 23 were used in conjunction with the filterable PM emission factors shown.

[e] Total PM is the sum of filterable PM, condensable inorganic PM, and condensable organic PM.

[f] Total PM-10 is the sum of filterable PM-10, condensable inorganic PM, and condensable organic PM.

[g] Drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. The data indicate that fuel type does not significantly effect PM emissions.

[h] References 31, 36-38, 340.

[j] Because no data are available for uncontrolled condensable inorganic PM, the emission factor is assumed to be equal to the maximum controlled condensable inorganic PM emission factor.

[k] References 36-37.

[m] Reference 1, Table 4-14. Average of data from 36 facilities. Range: 0.0036 to 0.097 lb/ton. Median: 0.020 lb/ton. Standard deviation: 0.022 lb/ton.

[n] Reference 1, Table 4-14. Average of data from 30 facilities. Range: 0.0012 to 0.027 lb/ton. Median: 0.0051 lb/ton. Standard deviation: 0.0063 lb/ton.

[p] Reference 1, Table 4-14. Average of data from 41 facilities. Range: 0.00035 to 0.074 lb/ton. Median: 0.0046 lb/ton. Standard deviation: 0.016 lb/ton.

[q] Reference 1, Table 4-14. Average of data from 155 facilities. Range: 0.00089 to 0.14 lb/ton. Median: 0.010 lb/ton. Standard deviation: 0.017 lb/ton.

Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton)[a]

Source[b]	Total Particulate Matter[r,s]	EMISSION FACTOR RATING	Total PM-10	EMISSION FACTOR RATING	Total PM-2.5	EMISSION FACTOR RATING
Primary Crushing (SCC 3-05-020-01)	ND		ND[n]		ND[n]	
Primary Crushing (controlled) (SCC 3-05-020-01)	ND		ND[n]		ND[n]	
Secondary Crushing (SCC 3-05-020-02)	ND		ND[n]		ND[n]	
Secondary Crushing (controlled) (SCC 3-05-020-02)	ND		ND[n]		ND[n]	
Tertiary Crushing (SCC 3-050030-03)	0.0054[d]	E	0.0024[o]	C	ND[n]	
Tertiary Crushing (controlled) (SCC 3-05-020-03)	0.0012[d]	E	0.00054[p]	C	0.00010[q]	E
Fines Crushing (SCC 3-05-020-05)	0.0390[e]	E	0.0150[e]	E	ND	
Fines Crushing (controlled) (SCC 3-05-020-05)	0.0030[f]	E	0.0012[f]	E	0.000070[q]	E
Screening (SCC 3-05-020-02, 03)	0.025[c]	E	0.0087[l]	C	ND	
Screening (controlled) (SCC 3-05-020-02, 03)	0.0022[d]	E	0.00074[m]	C	0.000050[q]	E
Fines Screening (SCC 3-05-020-21)	0.30[g]	E	0.072[g]	E	ND	
Fines Screening (controlled) (SCC 3-05-020-21)	0.0036[g]	E	0.0022[g]	E	ND	
Conveyor Transfer Point (SCC 3-05-020-06)	0.0030[h]	E	0.00110[h]	D	ND	
Conveyor Transfer Point (controlled) (SCC 3-05-020-06)	0.00014[i]	E	4.6×10^{-5}[i]	D	1.3×10^{-5}[q]	E
Wet Drilling - Unfragmented Stone (SCC 3-05-020-10)	ND		8.0×10^{-5}[j]	E	ND	
Truck Unloading -Fragmented Stone (SCC 3-05-020-31)	ND		1.6×10^{-5}[j]	E	ND	
Truck Loading - Conveyor, crushed stone (SCC 3-05-020-32)	ND		0.00010[k]	E	ND	

a. Emission factors represent uncontrolled emissions unless noted. Emission factors in lb/Ton of material of throughput. SCC = Source Classification Code. ND = No data.

b. Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have as much influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with an appropriate control efficiency that best reflects the effectiveness of the controls employed.

c. References 1, 3, 7, and 8

d. References 3, 7, and 8

e. Reference 4

f. References 4 and 15

g. Reference 4

h. References 5 and 6

i. References 5, 6, and 15

j. Reference 11

k. Reference 12

l. References 1, 3, 7, and 8

m. References 1, 3, 7, 8, and 15

n. No data available, but emission factors for PM-10 for tertiary crushers can be used as an upper limit for primary or secondary crushing

o. References 2, 3, 7, 8

p. References 2, 3, 7, 8, and 15

q. Reference 15

r. PM emission factors are presented based on PM-100 data in the Background Support Document for Section 11.19.2

s. Emission factors for PM-30 and PM-50 are available in Figures 11.19.2-3 through 11.19.2-6.

Note: Truck Unloading - Conveyor, crushed stone (SCC 3-05-020-32) was corrected to Truck Loading - Conveyor, crushed stone (SCC 3-05-020-32). October 1, 2010.

.

ATTACHMENT "B"

SCAQMD EMISSION FACTORS (CRITERIA AND TOXIC POLLUTANTS EF TABLES AND HHV TABLE)

APPENDIX A - DEFAULT EMISSION FACTORS FOR COMBUSTION EQUIPMENT (CRITERIA AND TOXICS)

Table 1
Default Emission Factors for External Combustion Equipment for Forms B1 and B1U (for all sizes)

Fuel Type (fuel unit)	Organic Gases (lb/unit)	Methane (lb/unit)	Nitrogen Oxides (lb/unit)	Sulfur Oxides (lb/unit)	Carbon Monoxide (lb/unit)	Particulate Matter (lb/unit)
Natural Gas (mmscf) / Boilers Only	5.50	2.30	100.00	0.60	84.00	7.60
Natural Gas (mmscf) / Other Equipment	7.00	2.30	130.00	0.60	35.00	7.50
LPG, Propane, Butane (1000 gal.)	0.26	0.28	12.80	4.60	3.20	0.28
Diesel/Distillate Oil (1000 gal.)	1.32	0.05	20.00	7.10	5.00	2.00

Table 2
Default Emission Factors for Internal Combustion Engines (ICE) for Forms B2 and B2U

Fuel Type (fuel unit)/Engine Type	Organic Gases (lb/unit)	Methane (lb/unit)	Nitrogen Oxides (lb/unit)	Sulfur Oxides (lb/unit)	Carbon Monoxide (lb/unit)	Particulate Matter (lb/unit)
Natural gas (mmscf)/2 Stroke (Lean-Burn) ICE	122.00	1,479.00	3233.00	0.60	394.00	39.00
Natural gas(mmscf)/4 Stroke (Lean-Burn) ICE*	120.00	1,275.00	4162.00	0.60	323.00	----
Natural gas(mmscf)/4 Stroke (Rich-Burn) ICE	30.00	235.00	2254.00	0.60	3794.00	10.00
LPG, Propane, Butane (1000 gal.)/All ICEs	83.00	----	139.00	0.35	129.00	5.00
Diesel/Distillate Oil (1000 gal.)/All ICEs	37.50	----	469.00	7.10	102.00	33.50
Gasoline (1000 gal.)/All ICEs	206.00	----	102.00	5.30	3,940.00	6.50

* If engine specification is not available, assume 4 Stroke (Lean-Burn) ICE.

Table 3
Rule-Based Emission Factors for Combustion Equipment for Forms B1 and B2
(For Equipment in Compliance with Rule Limits)

Fuel Type (fuel unit)	Nitrogen Oxides (lb/fuel unit)
A) E.F. based on Rule 1146 for Form B1	
Natural Gas (mmscf)	49.80
LPG, Propane, Butane (1000 gal.)	4.50
B) E.F. based on Rule 1146.1/1146.2 for Form B1	
Natural Gas (mmscf)	37.40
LPG, Propane, Butane (1000 gal.)	3.40
C) E.F. based on Rule 1110.2 for Form B2 (Stationary ICEs only)	
Natural gas (mmscf)	238.70
LPG, Propane, Butane (1000 gallons)	15.30
Diesel/Distillate Oil (1000 gallons)	33.40
Gasoline (1000 gallons)	21.50

Table B-3: DEFAULT EF FOR LPG, BUTANE, OR PROPANE COMBUSTION (LB / 1000 GAL)

SOURCE: External Combustion Equipment (Boiler, Oven, Dryer, Furnace, Heater, Afterburner)

TAC Code	POLLUTANT	CAS NO.	<10 MMBTU/HR	10-100 MMBTU/HR	>100 MMBTU/HR
2	Benzene	71432	0.00071	0.00051	0.00015
12	Formaldehyde	50000	0.00151	0.00109	0.00032
19	PAHs (excluding Naphthalene)	1151	0.00001	0.00001	0.00001
19	Naphthalene	91203	0.00003	0.00003	0.00003
29	Acetaldehyde	75070	0.00038	0.00028	0.00008
30	Acrolein	107028	0.00024	0.00024	0.00007
32	Ammonia	7664417	0.30000	0.30000	0.30000
40	Ethyl benzene	100414	0.00084	0.00061	0.00018
44	Hexane	110543	0.00056	0.00041	0.00012
68	Toluene	108883	0.00325	0.00235	0.00069
70	Xylene	1330207	0.00241	0.00175	0.00051

SOURCE: Turbine

TAC Code	POLLUTANT	CAS NO.	ALL SIZES
2	Benzene	71432	0.00109
4	1,3-Butadiene	106990	0.0000389
12	Formaldehyde	50000	0.0643
19	Naphthalene	91203	0.000118
19	PAHs (excluding Naphthalene)	1151	0.0000815
29	Acetaldehyde	75070	0.00362
30	Acrolein	107028	0.000579
32	Ammonia	7664417	0.30000
40	Ethylbenzene	100414	0.00290
62	Propylene oxide	75569	0.00262
68	Toluene	108883	0.0118
70	Xylene	1330207	0.00579

(Continued)

Table 3-D

EMISSION FEE BILLING NOx FACTORS

BASIC EQUIPMENT	TYPE OF FUEL	EMISSION FACTOR	HIGHER HEATING VALUE OF FUEL
Boilers,	Natural Gas	130 lb/mmscf	1050 mmBtu/mmscf
Ovens,	Refinery Gas	161 lb/mmscf	1150 mmBtu/mmscf
Heaters,	LPG, Propane, Butane	12.8 lb/mgal	94 mmBtu/mgal
Furnaces,	Diesel Light Dist. (0.05% S)	19 lb/mgal	137 mmBtu/mgal
Kilns,	Fuel Oil (0.1% S)	20 lb/mgal	150 mmBtu/mgal
Calciners,	Fuel Oil (0.25% S)	60 lb/mgal	150 mmBtu/mgal
Dryers	Fuel Oil (0.5% S)	55 lb/mgal	150 mmBtu/mgal
Internal	Natural Gas	3400 lb/mmscf	1050 mmBtu/mmscf
Combustion	LPG, Propane, Butane	139 lb/mgal	94 mmBtu/mgal
Engines	Gasoline	102 lb/mgal	130 mmBtu/mgal
	Diesel Oil	469 lb/mgal	137 mmBtu/mgal
Gas Turbines	Natural Gas	413 lb/mmscf	1050 mmBtu/mmscf
	Diesel Oil	67.8 lb/mgal	137 mmBtu/mgal

ALTA ENVIRONMENTAL

ATTACHMENT "C"

NO_X AND CO SJVACPD EMISSION LIMITS CONVERSION

Dunn Dryer Emission Factor Calculations

Calculation Using EPA Method 19 Equation 19-1	Equation 19-1: $E = C_d * F_d * (20.9 - (20.9 - \%O_{2d}))$

Propane NOx Determination			
Variable	**Value**	**Units**	**Reference**
CF_{NOx}	1.194E-07	lb/scf/ppmv	Conversion factor for ppm NOx to lb/scf (from Table 19-1)
$PPMV_{O2}$	4.3	ppm	Emission Limit for NOx @ 3% O2 From Rule
C_{d-NOX}	5.134E-07	lb/scf	Pollutant Concentration on Dry Basis (NOx)
$\%O_{2d}$	3	%	Oxygen Correction Value for Oven from Rule
F_d	8,710	dscf/mmBtu	Dry F Factor for Propane (from Table 19-2)
E	**0.0052**	**lb/mmBtu**	**Emission Rate per heat input, converted from concentration limit**
V	94	mmBtu/mgal	Higher Heating Value for Propane
$\mathbf{R_C}$	**0.49**	**lb/mgal**	**Emission Rate of NO_X per fuel rate, converted from concentration limit**

CO Conversion Factor Determination			
Variable	**Value**	**Units**	**Reference**
MW_{NO2}	46.006		Molecular weight of NOx
MW_{CO}	28.010		Molecular weight of CO
$MWRatio_{CO/NO2}$	0.60883		Ratio
CF_{NOx}	1.194E-07	lb/scf/ppmv	Conversion factor for ppm NOx to lb/scf (from Table 19-1)
CF_{CO}	7.269E-08	lb/scf/ppmv	Conversion factor for CO adjusted for Molecular Weight

Propane CO Determination			
Variable	**Value**	**Units**	**Reference**
CF_{NOx}	7.269E-08	lb/scf/ppmv	Conversion factor for CO adjusted for Molecular Weight
$PPMV_{O2}$	42	ppm	Emission Limit for CO @ 3% O2 From Rule
C_{d-CO}	3.053E-06	lb/scf	Pollutant Concentration on Dry Basis (NOx)
$\%O_{2d}$	3	%	Oxygen Correction Value for Oven from Rule
F_d	8,710	dscf/mmBtu	Dry F Factor for Propane (from Table 19-2)
E	**0.0311**	**lb/mmBtu**	**Emission Rate per heat input, converted from concentration limit**
V	94	mmBtu/mgal	Higher Heating Value for Propane
$\mathbf{R_C}$	**2.92**	**lb/mgal**	**Emission Rate for NO_X converted from concentration limit**

ATTACHMENT "D"

EPA TANKS PROGRAM OUTPUT FOR ASPHALT OIL TANK

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification	
User Identification:	Asphalt Tank
City:	
State:	California
Company:	
Type of Tank:	Horizontal Tank
Description:	30,000 gallon tank
Tank Dimensions	
Shell Length (ft):	48.00
Diameter (ft):	10.25
Volume (gallons):	30,000.00
Turnovers:	25.00
Net Throughput(gal/yr):	750,000.00
Is Tank Heated (y/n):	Y
Is Tank Underground (y/n):	N
Paint Characteristics	
Shell Color/Shade:	White/White
Shell Condition	Good
Breather Vent Settings	
Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Asphalt Tank - Horizontal Tank
, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Asphalt Oil	All	350.00	300.00	400.00	400.00	0.1805	0.0532	0.5309	84.0000			1,000.00	
Benzene						139.4535	82.3153	220.5297	78.1100	0.0001	0.0036	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Formaldehyde						0.0083	0.0016	0.0296	30.0300	0.0012	0.0000	30.03	Option 2: A=4.28176, B=959.43, C=29.758
Naphthalene						5.3638	2.2954	11.2236	128.2000	0.0010	0.0020	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Unidentified Components						0.1796	0.1789	0.1789	83.9653	0.9977	0.9944	1,000.26	

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Asphalt Tank - Horizontal Tank
, California

Annual Emission Calcaulations	
Standing Losses (lb):	240.3879
Vapor Space Volume (cu ft):	2,522.7789
Vapor Density (lb/cu ft):	0.0017
Vapor Space Expansion Factor:	0.1569
Vented Vapor Saturation Factor:	0.9533
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	2,522.7789
Tank Diameter (ft):	10.2500
Effective Diameter (ft):	25.0350
Vapor Space Outage (ft):	5.1250
Tank Shell Length (ft):	48.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0017
Vapor Molecular Weight (lb/lb-mole):	84.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1805
Daily Avg. Liquid Surface Temp. (deg. R):	809.6700
Daily Average Ambient Temp. (deg. F):	65.4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	859.6700
Tank Paint Solar Absorptance (Shell):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1569
Daily Vapor Temperature Range (deg. R):	100.0000
Daily Vapor Pressure Range (psia):	0.4777
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1805
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0532
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.5309
Daily Avg. Liquid Surface Temp. (deg R):	809.6700
Daily Min. Liquid Surface Temp. (deg R):	759.6700
Daily Max. Liquid Surface Temp. (deg R):	859.6700
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9533
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.1805
Vapor Space Outage (ft):	5.1250
Working Losses (lb):	270.7500
Vapor Molecular Weight (lb/lb-mole):	84.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1805
Annual Net Throughput (gal/yr.):	750,000.0000
Annual Turnovers:	25.0000
Turnover Factor:	1.0000
Tank Diameter (ft):	10.2500
Working Loss Product Factor:	1.0000
Total Losses (lb):	511.1379

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Asphalt Tank - Horizontal Tank
, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Asphalt Oil	270.75	240.39	511.14
Benzene	0.97	0.87	1.84
Unidentified Components	269.23	239.04	508.27
Naphthalene	0.54	0.48	1.02
Formaldehyde	0.00	0.00	0.00

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate Application.

Checklist for Complete Applications (include the following)	
☐	1. A signed Authority to Construct/Permit to Operate Application.
☐	2. Include a site map that identifies the location(s) where the new/modified unit(s) will operate and the approximate property lines. This is required for any proposal for new equipment, an increase in emissions from existing units, or change in location of emission points.
☐	3. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
☐	4. Equipment listing (including a list of electric motors with hp rating).
☐	5. Include a short project description, including a process flow schematic identifying emission points.
☐	6. Process parameters (describe throughput, operating schedule, fuel rate, raw material usage, etc.).
☐	7. Identify control equipment/technology.
☐	8. Any additional information required to calculate emissions.
☐	9. $87 filing fee for each permit unit. *Note: Permit application processing time will be billed at the applicable District hourly labor rate*

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the regional offices listed below. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Northern Region Office
(Serving San Joaquin, Stanislaus, and Merced Counties):

4800 Enterprise Way
Modesto, California 95356-8718
(209) 557-6400
FAX: (209) 557-6475
SBA Hotline: (209) 557-6446

Central Region Office
(Serving Madera, Fresno, and Kings Counties):

1990 E Gettysburg Avenue
Fresno, California 93726-0244
(559) 230-5900
FAX: (559) 230-6061
SBA Hotline: (559) 230-5888

Southern Region Office
(Serving Tulare and Kern Counties):

34946 Flyover Court
Bakersfield, California 93308
(661) 392-5500
FAX: (661) 392-5585
SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form

www.valleyair.org

1. PERMIT TO BE ISSUED TO: Dunn's Inc.

2. MAILING ADDRESS: STREET or P O BOX: 303 N. Ben Maddox Way
CITY: Visalia STATE: CA ZIP CODE: 93292

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 7763 Avenue 280 CITY: Visalia
If a physical address is not available:
ZIP CODE: 93277 1/4 SECTION: TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL? ☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Hot mix asphalt plant

6. S.I.C. CODE OF FACILITY:
2951

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☒ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #s if known, a site map, a Supplemental Application Form if available, and use additional sheets if necessary*)

Raw aggregate is fed into a rotary dryer from an on-site cold feed system. The material is heated to specification temperature to remove moisture and is mixed with liquid asphalt. The asphaltic concrete is discharged into an incline slat conveyor, which is fed into a hot asphalt silo. Waiting trucks are loaded from the hot asphalt silo, weighed, and driven to the paving site.

☒ Yes, a site map is included indicating approximate emission locations and property lines.

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☒ NO *Please provide expected date of installation or modification:* ASAP

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☒ YES *If "Yes", please complete the CEQA Information form: http://www.valleyair.org/busind/pto/ptoforms/CEQAInformationForm.doc.*
☐ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☐ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)? ☐ YES ☒ NO *If yes, NOV/NTC #:*

13. APPLICANT NAME: Mark Dunn
TITLE:
SIGNATURE: DATE:

14. APPLICANT CONTACT INFORMATION:
PHONE #: ( ) -
CELL PHONE #: ( ) -
E-MAIL: mark@dunnsinc.net

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"* ☐ *"INSPECT"*

FOR APCD USE ONLY:

DATE STAMPS	FILING FEE RECEIVED:$	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID #:	

Clear Form

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

CEQA Information

The San Joaquin Valley Air Pollution Control District (District) is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the District in clarifying whether or not the project has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document (CEQA Guidelines §15060(a).

PERMIT TO BE ISSUED TO: Dunn's Inc.
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 7763 Avenue 280 Visalia, CA 93277

Section 1: Agency Approvals

	Check "Yes" or "No" as applicable.	**Yes**	**No**
1.	Has a Lead Agency prepared an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☐
2.	Is a Lead Agency in the process of preparing an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☐
	*If "**Yes**" is checked for either question 1 or 2, please provide the following information:* - *Lead Agency name :* Tulare County Resource Mgmt Agency - *Name of Lead Agency contact person:* Hector Guerra - *Type of CEQA document prepared:* Environmental Impact Review (EIR) - *Project reference number:* PSP 18-049 - *If a CEQA Environmental Review document has been prepared for this project,* ***please attach a copy of the Notice of Determination or the Notice of Exemption*** *If "**No**" is checked for both questions 1 and 2, please attach an explanation*:		

Note 1: If you answered YES to question 1 OR 2 do not complete Section 2 of this form, and please return the completed form to the Air Pollution Control District.

Section 2: Project Information

	Note: If you answered YES to question 1 OR 2 of Section 1 do not complete this section, and please return the completed form to the Air Pollution Control District.	Yes	No
1.	Would this project result in more than 47 heavy-duty truck (HD) one-way trips per day to and from the facility? (23 heavy-duty truck (HD) round trips per day).	☐	☐
2.	Would this project result in a need for more than 350 new employees?	☐	☐
3.	Would this project result in more than 700 customer trips per day to and from the facility?	☐	☐
4.	Would this project increase the demand for water at the facility by more than 5,000,000 gallons per day?	☐	☒
5.	Would this project require construction of new water conveyance infrastructure *Post-project facility water demand exceeding the capacity of local water purveyor.*	☐	☐
6.	Would this project create a permanent need for new or additional public services for Solid Waste Disposal or Hazardous Waste Disposal? *Post-project waste discharge exceeding the capacity of the local Solid Waste Disposal or Hazardous Waste Disposal.*	☐	☐
7.	Would this project result in noticeable off-site odors that have the potential to generate nuisance complaints?	☐	☐
8.	Would this project include equipment with a noise specification greater than 90 decibels (db)?	☒	☒
9.	Has this project generated any known public concern regarding potential adverse impacts? *Public concern may be interpreted as concerns by local groups at public meetings, adverse media attention such as negative newspapers or other periodical publications, local news programs, environmental justice issues, etc.*	☐	☒
10.	Would this project result in any demolition, excavation, and/or grading/construction activities outside the perimeter of the existing facility?	☐	☒
11.	Would this project result in any demolition, excavating, and/or grading construction activities that encompass an area exceeding 20,000 Square feet (inside or outside the perimeter of the existing facility)?	☐	☒
12.	Is this project part of a larger development activity at the facility that collectively would result in answering YES to any of the questions listed above?	☐	☐

FOR DISTRICT USE ONLY – CEQA ANALYSIS REQUEST

PERMIT	TECHNICAL SERVICES
AQE Name:	AQS Name:
Facility Name:	PAS #: CEQA #:
Facility #: Project #:	Project with potential public concern? ☐ Yes ☐ No
Is this an RO project? ☐ Yes ☐ No	Detailed CEQA analysis required? ☐ Yes ☒ No
Project subject to Public Notice? ☐ Yes ☐ No	Indemnification Agreement (IA) required? ☐ Yes ☐ No ☐ N/A Letter of Credit (LOC) required? ☐ Yes ☐ No ☐ N/A
Please summarize or attach the following: - ☐ Copy of application form - ☐ CEQA Analysis Request form - ☐ GHG Determination (>230MT-CO_2e/yr? BPS?) - ☐ Expected date of ATC(s) issuance: __________	- ☐ IA/LOC received - ☐ CEQA paragraph sent to permit engineer - ☐ NOD prepared - ☐ County filing fees District check prepared - ☐ Game and Fish fees District check or proof of payment *(District check prepared after receiving applicant check)* - ☐ CEQA Ready and ok to issue ATC
Date form is forwarded to Tech. Services SVr:	Date form is forwarded back to permit engineer:

Clear Form

ALTA ENVIRONMENTAL
3777 LONG BEACH BLVD, ANNEX BUILDING. LONG BEACH CA 90807
altaenviron.com o.562.495.5777 f.562.495.5877

September 6, 2019

Dunn’s Inc.
303 N. Ben Maddox Way
Visalia, 93292

Attention: Mark Dunn

Subject: San Joaquin Valley APCD Stationary Concrete Batch Plant Permit Application

Dear Mark:

Enclosed is your copy and the original permit application package for your stationary concrete batch plant with San Joaquin Valley APCD.

Please sign the originals and forward the original to the San Joaquin Valley APCD, along with a check in the amount of $87.00 to cover the filing fee. In addition, every applicant who files an application for an Authority to Construct or a Permit to Operate with the District shall pay an engineering evaluation fee for the processing of the application. The fee shall be calculated using the staff hours expended and the prevailing weighted labor rate. All filing fees paid shall be credited towards the evaluation fee.

If you have any questions, please feel free to call me at (562) 495-5777.

Sincerely,

Diana Nguyen
Alta Environmental

3777 LONG BEACH BLVD, ANNEX BUILDING. LONG BEACH CA 90807
altaenviron.com o.562.495.5777 f.562.495.5877

September 6, 2019

San Joaquin Valley Air Pollution Control District
1900 East Gettysburg Avenue
Fresno, CA 93726-0244

Attention: Permit Services

Subject: Dunn's Inc.
Stationary Concrete Batch Plant Permit Application

Attached you will find the application package which covers the permit to construct for Dunn's Inc. stationary concrete batch plant. You will also find a check in the amount of $87.00 to cover the filing fees.

We trust the information provided will allow you to complete your evaluation. If you have any questions, please feel free to give us a call at (562) 495-5777.

Best Regards,

Diana Nguyen
Alta Environmental

cc: Mark Dunn, Dunn's Inc.

Alta Environmental an NV5 Company
3777 Long Beach Boulevard, Annex Building
Long Beach, CA 90807
T: (562) 495-5777 F: (562) 495-5877

FEE SCHEDULE WORK SHEET

(For Permit Processing in Accordance With Rule 3010)

Permits to be issued to: Dunn's Inc.

Address: 303 N. Maddox Way

City, State, Zip: Visalia, CA 93292

Quantity of Identical Units	Equipment/Process	Fee Schedule	Permit Application Fee	=	Total
1	Stationary concrete batch plant	--	$87.00	=	$87.00
		--		=	

Total Permit Processing Fee Due $87.00

Comments:

APPLICATION TO THE
SAN JOAQUIN VALLEY AIR
POLLUTION CONTROL DISTRICT

1900 East Gettysburg Avenue
Fresno, CA 93726-0244

PERMIT TO CONSTRUCT FOR A STATIONARY CONCRETE BATCH PLANT

Prepared For:

Dunn's Inc.
303 N. Ben Maddox Way
Visalia, CA 93292

Project No.: DUNN-19-8904
Contact: Diana Nguyen
Date: July 23, 2019

Alta Environmental an NV5 Company
3777 Long Beach Boulevard Annex Building
Long Beach, CA 90807 United States of America
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www.altaenviron.com

3777 LONG BEACH BLVD, ANNEX BUILDING. LONG BEACH CA 90807
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SUMMARY

Dunn's Equipment, Inc. (Dunn's Inc.) is requesting a Permit to Construct a portable concrete batch plant. This plant will be powered by electric grid power. This application will show that the emissions are less than the District's Rule 2201 (4.5.3) annual thresholds therefore exempting the plant from offsets. The plant emissions are below the District's Rule 2201 (5.4) daily public notice thresholds for all pollutants.

This concrete batch plant will be equipped with the Best Available Control Technology (BACT) in compliance with the District's New Source Review Regulation.

TABLE OF CONTENTS

TABLE OF CONTENTS *(Continued)*

PART I – PROJECT DESCRIPTION

A. Business Background

1. Name

   Dunn's Inc.

2. Owner

   Dunn's Inc.
   303 N. Ben Maddox Way
   Visalia, CA 93292

3. Contact

   Mark Dunn
   (559) 734-5373

4. Entitlement

   Equipment to be owned and operated by Dunn's Inc.

5. Business Description

   Concrete Batch Plant

B. Type of Application

Permit to Construct

C. Description of Facility

1. Location

   7763 Avenue 280
   Visalia, CA 93277

2. General Purpose of Facility

   The proposed facility will produce ready-mix concrete for wholesale delivery to construction industries for use in paving streets and highways.

D. Description of Process

1. General Description of each Process Line

   a.) Concrete Batch Plant

   The facility will produce Ready-Mix concrete to be used in paving of streets and highways.

   Sand and aggregate are delivered by bottom discharge trucks to a paved area of the facility. A loader bucket scoops up the sand/aggregate and discharges the material into a loader hopper. The sand and aggregate are transferred by a belt conveyor to four plant storage bins each containing less than ¼ days storage. Each storage bin falls by gravity into a weigh batcher. The live bottom weigh batcher transfers the material from one conveyor to another. The sand and aggregate are transferred by belt conveyor to the Concrete Mixer truck.

   Cement and fly ash are delivered to two storage silos by pneumatic trucks. One of the silos is equipped with a single compartment which feed directly into the weighing and batching hopper. The second silo discharges into a screw conveyor which transfers the cement/fly ash to the weighing batching hopper. The hopper discharges directly into the Concrete Mixer Truck.

   The Concrete Mixer Truck is fed simultaneously by the aggregate and cement weigh hoppers. Control of material feeds is automatic. Water is added to the Concrete Mixer Truck.

2. Flow Diagram

   Refer to figure 1. This diagram illustrates the concrete batch plant and shows the interaction between process lines, transfer of materials, and basic control equipment.

3. Maximum Production Schedule

   The plant will produce a maximum of 641.8 tons of concrete per day and 200,250 tons per year.

4. Equipment List and Horsepower Schedule

(Refer to Flow Diagram Figure 1)

Item	Description	HP
H-1	Loader Feed Hopper	-
BC-1	Radial Belt Conveyor, 30" W	25
BC-2	Aggregate Weigh Hopper Belt Conveyer, 36"W	20
AB-1	Aggregate Bin, 4 Compartment, 160 Cu Yd	-
AWH-1	Aggregate Weigh Hopper, 12 Cu Yd	-
S-1	Silo 1 - Cement or Fly Ash 2260 Cu Ft	-
SC-1	Silo 1 Cement Screw	15
S-2	Silo 2 - Cement or Fly Ash 2260 Cu Ft	-
SC-3	Cement Weigh Hopper, 14" diameter	10
CWH-1	Cement Weigh Hopper, 12 Cu Yd	-
BV-1	Bin Vent	-
BV-2	Bin Vent	-
BV-3	Cement Weigh Hopper Batcher Vent	-
BV-4	Mixer Truck Dust Collector	15
	Air Blower	5
	Air Compressor	10

E. Control Equipment

1. Particulate Matter Control

The District New Source Review Regulation specifies that new equipment will be in compliance with the BACT guidelines.

Material will be kept sufficiently moist to control particulate via the use of water spray.

PART II – REGULATORY ANALYSIS

A. Analysis of Emissions Restrictions

District prohibitory rules limit the emissions of various pollutants from all sources in the District. The specific rules that apply to the proposed project are discussed below. The limitations in these rules will be met through the application of BACT. BACT requirements are discussed in detail in Section "B" of this part of the application.

1. Fugitive Dust

   No person shall perform any outdoor handling, storage and transport of bulk materials unless the appropriate control measures are sufficiently implemented to limit visible dust emissions to 20% opacity as set forth in Rule 8031 and Table 8031-1. Compliance with the rule will be achieved through the use of water.

2. Rule 4101 Visible Emissions

   The opacity of visible emissions will be limited by Rule 4101 not to exceed No. 1 of the United States Bureau of Mines Ringelmann Chart, or to the equivalent opacity. Ringelmann No. 1 corresponds to 20% opacity. Since BACT will limit opacity of 5%, compliance with Rule 4101 will be achieved.

3. Rule 4001 New Source Performance Standards (NSPS)

   This facility is subject to the requirements of NSPS Subpart OOO, Nonmetallic Mineral Processing Plants. This facility will demonstrate compliance with the performance standards of Subpart OOO within 60 days of reaching maximum production, but no later than 180 days after start-up.

   All affected facilities are manufactured after April 22, 2008, therefore are subject to 7% opacity for belts and screens and 12% opacity for belt conveyors.

4. Rule 4102 Public Nuisance

No person shall discharge from any source whatsoever such quantities of air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger to comfort, repose, health or safety of any such person or the public, or which cause or have a natural tendency to cause injury or damage to business or property.

This operation is not expected to produce a public nuisance or annoyance.

5. Federally-Mandated Operation Permit

Since this facility's potential emissions do not exceed any major source thresholds per year per Rule 2201, this facility is not a major source, and Rule 2520 does not apply (See Part III (D) of the application).

B. Analysis of New Source Review Requirements/BACT

In accordance with the requirements of Rule 2201.4.1, (BACT), Dunn's Inc has identified the BACT measures that apply to the facility.

1. Aggregate Processing

The receiving materials will have moisture in the product and on-site water sprinklers to assist in additional dust suppression.

2. Cement Processing

The plant will contain two storage silos (S-1 & S-2). Each silo compartment will have its own CON-E-CO Model PJC300S Silo Dust Vents (BV-1 & BV-2). Collected material will be discharged back into the storage compartment that the dust was generated from. The cement will be weighed in a cement weigh hopper (CWH-1), which will be vented through a weigh hopper dust vent (BV-3) CON-E-CO Model 14-22. Collected dust in the cement weigh hopper dust vent will be discharged back into the cement weigh hopper.

3. Transfer Point

Water sprays will be used to minimize particulate emissions from transfer points between conveyors and other loading operations when necessary.

C. Offsets

Since this facility is below the offset threshold as in Rule 2201, Section 4.5.3, no offsets will be required (See Part III (C) of the application).

D. Public Notification

None of the daily emissions from criteria pollutants will be above 100 pounds per day. Therefore, public notice will not be necessary according to Rule 2201, Section 5.4 (See Part III (C) of the application).

PART III – ESTIMATED EMISSIONS

A. Criteria Emissions Estimates for Concrete Batch Plant

The emissions estimates for the Concrete Batch Plant were calculated below. The emissions factors were taken from EPA AP 42 Table 11.12-2 and Table 11.12.-8 (Refer to Attachment "A").

Emission Point	Description	Throughput (tons/hour)	×	PM_{10} Emissions Factor (lbs/ton)	=	PM_{10} (lbs/hour)
1	Truck Unloading to Load Feed Hopper	66.1		3.30E-03		2.18E-01
2	Load Feed Hopper to Belt Conveyer 1	66.1		3.30E-03		2.18E-01
3	Belt Conveyer 1 to Aggregate Bin	66.1		3.30E-03		2.18E-01
4	Aggregate Bin to Aggregate Weigh Hopper	66.1		3.30E-03		2.18E-01
5	Aggregate Weigh Hopper to Belt Conveyer 2	66.1		3.30E-03		2.18E-01
6	Belt Conveyer to Truck Loading	66.1		3.10E-01		2.05E+01
				Total PM_{10} Emissions (lb/hour)		1.09E+00
				Concrete Throughput (tons/hour)	÷	80.2
				Plant PM_{10} Emission Factor (lbs/ton)		1.36E-02

Emission Point	Description	Throughput (tons/hour)	×	PM_{10} Emissions Factor (lbs/ton)	=	PM_{10} (lbs/hour)
7	Cement Unloading to Storage Silos	26.0		4.70E-01		1.22E+01
8	Fly Ash Unloading to Storage Silos	26.0		1.10E+00		2.86E+01
9	Storage Silo 1 to Screw Conveyer	8.5		2.80E-03		2.37E-02
10	Storage Silo 2 to Cement Weigh Hopper	8.5		2.80E-03		2.37E-02
11	Screw Conveyer to Cement Weigh Hopper	8.5		2.80E-03		2.37E-02
12	Cement Weigh Hopper to Truck Loading	8.5		3.10E-01		2.63E+00
				Total PM_{10} Emissions (lb/hour)		6.40E+01
				Baghouse Filter Efficiency (99.9%)	×	0.001
				Concrete Throughput (tons/hour)	÷	80.2
				Plant PM_{10} Emission Factor (lbs/ton)		7.98E-04

Concrete Throughput	×	PM_{10} Emissions Rate (lbs/ton)	=	PM_{10} Emissions
641.8 tons/day		1.44E-02		9.24 lbs/day
200,250 tons/year		1.44E-02		2,883 lbs/year

B. Toxic Emissions Estimates for Concrete Batch Plant

Description	Throughput (tons/hr)	Ar (lbs/hr)	Be (lbs/hr)	Cd (lbs/hr)	Cr (lbs/hr)	Pb (lbs/hr)	Mn (lbs/hr)	Ni (lbs/hr)	P (lbs/hr)	Se (lbs/hr)
Cement Silo Filling	26	4.37E-08	4.65E-10	6.08E-09	6.55E-09	1.91E-08	5.25E-06	4.58E-07	3.07E-07	-
Cement Supplement Silo Filling	26	2.60E-05	2.35E-06	5.15E-09	3.17E-05	1.35E-05	6.66E-06	5.93E-05	9.20E-05	1.88E-06
Truck Loading	74.6	9.10E-07	1.82E-08	2.55E-09	8.50E-07	2.70E-07	4.56E-06	8.87E-07	2.86E-06	1.95E-07
TOTAL	-	2.70E-05	2.37E-06	1.38E-08	3.26E-05	1.38E-05	1.65E-05	6.06E-05	9.52E-05	2.08E-06

C. Stockpiles

There will be a total of 0.5 acres of stockpile area. In accordance with San Joaquin Valley aggregate plant processing policy SSP-1610-10, 80% control will be used for water.

Total (Acres)	×	PM_{10} Emission Factor (lb/acre-day)	×	Control Factor	=	PM_{10} Daily Emissions (lb/day)
0.5		5.27		0.2		0.527

Daily PM_{10} Emissions (lb/day)	×	Operating Schedule (days/yr)	=	PM_{10} Yearly Emissions (lb/yr)	=	PM_{10} Daily Emissions (tons/yr)
0.527		365		192		0.096

D. Facility Emissions Summary/Emissions Rule Evaluation

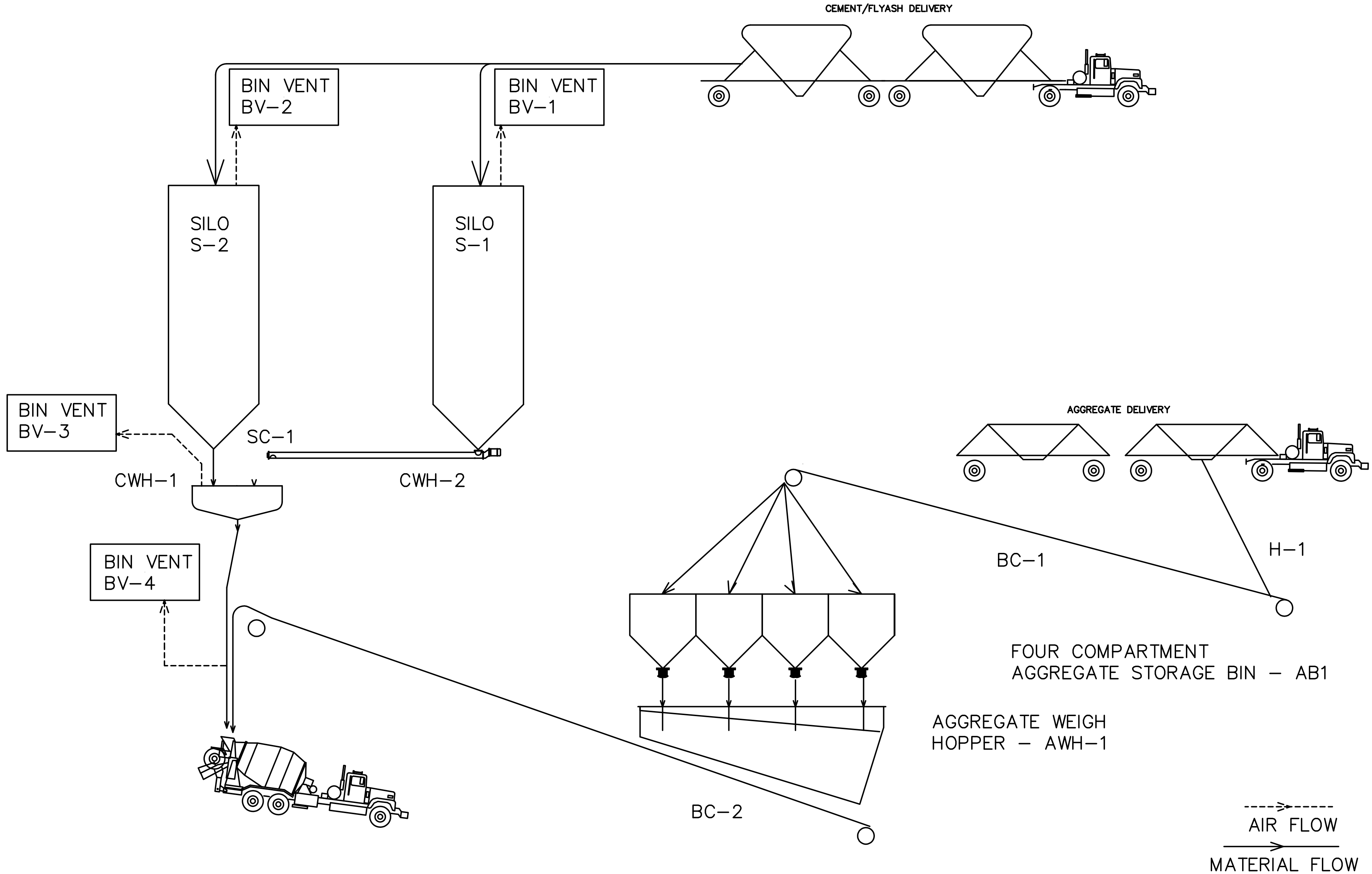
Pollutant	Concrete Batch Emissions (lbs/day)	+	Stockpile (lbs/day)	=	Overall Emissions (lbs/day)	≤	Rule 2201 5.4 Public Notice Limit (lbs/day)
PM_{10}	9.24		0.53		9.77	<	100

Pollutant	Concrete Batch Emissions (lbs/year)	+	Stockpile (lbs/yr)	=	Overall Emissions (lbs/year)	=	Overall Emissions (tons/year)	≤	Rule 2201 4.5.3 Offset Limits (tons/year)
PM_{10}	2,883		192		2,691		1.35	<	14.6

PART IV – ANALYSIS OF PERMIT RESTRICTIONS

Anticipated production and fuel limits are listed below:

Aggregate production through the plant should be limited to 641.8 tons per day and 200,250 tons per year.



REVISIONS	DESCRIPTION	BY	CK.	APP.	DATE

DRAWN BY	S.H.	3/15/98
CHECKED		
APPROVED		

DAVE HUMPHREY ENTERPRISES, INC.
LIVERMORE, CA · HESPERIA, CA
ENGINEERS · CONSULTANTS · DESIGNERS

NOBLE

CUSTOMER:
DUNN'S READY-MIX
VISALIA, CA

TITLE:
FLOW CHART
CON-E-CO BATCHMASTER

SCALE N.S.
ORDER NO.
DRAWING NO.
REV.

ATTACHMENT "A"

AP-42 EMISSION FACTORS
(TABLES 11.12-2 AND 11.12.-8)

TABLE 11.12-8 (ENGLISH UNITS)
CONCRETE BATCH PLANT METAL EMISSION FACTORS [a]

	Arsenic	Beryllium	Cadmium	Total Chromium	Lead	Manganese	Nickel	Total Phosphorus	Selenium	Emission Factor Rating
Cement Silo Filling [b] (SCC 3-05-011-07) w/ Fabric Filter	1.68e-06 4.24e-09	1.79e-08 4.86e-10	2.34e-07 ND	2.52e-07 2.90e-08	7.36e-07 1.09e-08	2.02e-04 1.17e-07	1.76e-05 4.18e-08	1.18e-05 ND	ND ND	E E
Cement Supplement Silo Filling [c] (SCC 3-05-011-17) w/ Fabric Filter	ND 1.00e-06	ND 9.04e-08	ND 1.98e-10	ND 1.22e-06	ND 5.20e-07	ND 2.56e-07	ND 2.28e-06	ND 3.54e-06	ND 7.24e-08	E E
Central Mix Batching [d] (SCC 3-05-011-09) w/ Fabric Filter	8.38e-06 2.96e-07	ND ND	1.18e-08 7.10e-10	1.42e-06 1.27e-07	3.82e-07 3.66e-08	6.12e-05 3.78e-06	3.28e-06 2.48e-07	2.02e-05 1.20e-06	ND ND	E E
Truck Loading [e] (SCC 3-05-011-10) w/ Fabric Filter	1.22e-05 6.02e-07	2.44e-07 1.04e-07	3.42e-08 9.06e-09	1.14e-05 4.10e-06	3.62e-06 1.53e-06	6.12e-05 2.08e-05	1.19e-05 4.78e-06	3.84e-05 1.23e-05	2.62e-06 1.13e-07	E E

ND=No data

[a] All emission factors are in lb of pollutant per ton of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 1865 lbs course aggregate, 1428 lbs sand, 491 lbs cement and 73 lbs cement supplement. Approximately 20 gallons of water was added to this solid material to produce 4024 lbs (one cubic yard) of concrete.

[b] The uncontrolled emission factors were developed from Reference 9. The controlled emission factors were developed form Reference 9 and 10. Although controlled emissions of phosphorous compounds were below detection, it is reasonable to assume that the effectiveness is comparable to the average effectiveness (98%) for the other metals.

[c] Reference 10.

[d] Reference 9. The emission factor units are lb of pollutant per ton of cement and cement supplement. Emission factors were developed from a typical central mix operation. The average estimate of the percent of emissions captured during each test run is 94%.

[e] Reference 9 and 10. The emission factor units are lb of pollutant per ton of cement and cement supplement. Emission factors were developed from two typical truck mix loading operations. Based upon visual observations of every loading operation during the two test programs, the average capture efficiency during the testing was 71%.

References for Section 11.12

1. *Air Pollutant Emission Factors*, APTD-0923, U.S. Environmental Protection Agency, Research Triangle Park, NC, April 1970.

2. *Air Pollution Engineering Manual*, 2nd Edition, AP-40, U.S. Environmental Protection Agency, Research Triangle Park, NC, 1974. Out of Print.

3. Telephone and written communication between Edwin A. Pfetzing, PEDCo Environmental., Inc., Cincinnati, OH, and Richards Morris and Richard Meininger, National Ready Mix Concrete Association, Silver Spring, MD, May 1984.

4. *Development Document for Effluent Limitations Guidelines and Standards of Performance, The Concrete Products Industries, Draft*, U.S. Environmental Protection Agency, Washington, DC, August 1975.

5. Portland Cement Association. (2001). Concrete Basics. Retrieved August 27, 2001 from the World Wide Web: http://www.portcement.org/cb/

6. *Technical Guidance for Control of Industrial Process Fugitive Particulate Emissions*, EPA-450/3-77-010, U.S. Environmental Protection Agency, Research Triangle Park, NC, March 1977.

7. *Fugitive Dust Assessment at Rock and Sand Facilities in the South Coast Air Basin*, Southern California Rock Products Association and Southern California Ready Mix Concrete Association, Santa Monica, CA, November 1979.

8. Telephone communication between T.R. Blackwood, Monsanto Research Corp., Dayton, OH, and John Zoller, PEDCo Environmental, Inc., Cincinnati, OH, October 18, 1976.

9. *Final Test Report for USEPA* [sic] *Test Program Conducted at Chaney Enterprises Cement Plant*, ETS, Inc., Roanoke, VA April 1994.

10. *Final Test Report for USEPA* [sic] *Test Program Conducted at Concrete Ready Mixed Corporation*, ETS, Inc., Roanoke, VA April 1994.

11. *Emission Test for Tiberi Engineering Company*, Alar Engineering Corporation, Burbank, IL, October, 1972.

12. *Stack Test "Confidential"* (Test obtained from State of Tennessee), Environmental Consultants, Oklahoma City, OK. February 1976.

13. *Source Sampling Report, Particulate Emissions from Cement Silo Loading*, Specialty Alloys Corporation, Gallaway, Tennessee, Reference number 24-00051-02, State of Tennessee, Department of Health and Environment, Division of Air Pollution Control, June 12, 1984.

TABLE 11.12-2 (ENGLISH UNITS)
EMISSION FACTORS FOR CONCRETE BATCHING [a]

Source (SCC)	Uncontrolled				Controlled			
	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating	Total PM	Emission Factor Rating	Total PM_{10}	Emission Factor Rating
Aggregate transfer [b] (3-05-011-04,-21,23)	0.0069	D	0.0033	D	ND		ND	
Sand transfer [b] (3-05-011-05,22,24)	0.0021	D	0.00099	D	ND		ND	
Cement unloading to elevated storage silo (pneumatic)[c] (3-05-011-07)	0.73	E	0.47	E	0.00099	D	0.00034	D
Cement supplement unloading to elevated storage silo (pneumatic)[d] (3-05-011-17)	3.14	E	1.10	E	0.0089	D	0.0049	E
Weigh hopper loading [e] (3-05-011-08)	0.0048	D	0.0028	D	ND		ND	
Mixer loading (central mix)[f] (3-05-011-09)	0.572 or Eqn. 11.12-1	B	0.156 or Eqn. 11.12-1	B	0.0184 or Eqn. 11.12-1	B	0.0055 or Eqn. 11.12-1	B
Truck loading (truck mix)[g] (3-05-011-10)	1.118	B	0.310	B	0.098 or Eqn. 11.12-1	B	0.0263 or Eqn. 11.12-1	B
Vehicle traffic (paved roads)	See AP-42 Section 13.2.1, Paved Roads							
Vehicle traffic (unpaved roads)	See AP-42 Section 13.2.2, Unpaved Roads							
Wind erosion from aggregate and sand storage piles	See AP-42 Section 13.2.5, Industrial Wind Erosion							

ND = No data

[a] All emission factors are in lb of pollutant per ton of material loaded unless noted otherwise. Loaded material includes course aggregate, sand, cement, cement supplement and the surface moisture associated with these materials. The average material composition of concrete batches presented in references 9 and 10 was 1865 lbs course aggregate, 1428 lbs sand, 491 lbs cement and 73 lbs cement supplement. Approximately 20 gallons of water was added to this solid material to produce 4024 lbs (one cubic yard) of concrete.

[b] Reference 9 and 10. Emission factors are based upon an equation from AP-42, section 13.2.4 Aggregate Handling And Storage Piles, equation 1 with k_{PM-10} =.35, k_{PM} = .74, U = 10mph, $M_{aggregate}$ =1.77%, and M_{sand} = 4.17%. These moisture contents of the materials ($M_{aggregate}$ and M_{sand}) are the averages of the values obtained from Reference 9 and Reference 10.

[c] The uncontrolled PM & PM-10 emission factors were developed from Reference 9. The controlled emission factor for PM was developed from References 9, 10, 11, and 12. The controlled emission factor for PM-10 was developed from References 9 and 10.

[d] The controlled PM emission factor was developed from Reference 10 and Reference 12, whereas the controlled PM-10 emission factor was developed from only Reference 10.

[e] Emission factors were developed by using the Aggregate and Sand Transfer Emission Factors in conjunction with the ratio of aggregate and sand used in an average $yard^3$ of concrete. The unit for these emission factors is lb of pollutant per ton of aggregate and sand.

[f] References 9, 10, and 14. The emission factor units are lb of pollutant per ton of cement and cement supplement. The general factor is the arithmetic mean of all test data.

[g] Reference 9, 10, and 14. The emission factor units are lb of pollutant per ton of cement and cement supplement. The general factor is the arithmetic mean of all test data.

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate Application.

Checklist for Complete Applications (include the following)	
☐	1. A signed Authority to Construct/Permit to Operate Application.
☐	2. Include a site map that identifies the location(s) where the new/modified unit(s) will operate and the approximate property lines. This is required for any proposal for new equipment, an increase in emissions from existing units, or change in location of emission points.
☐	3. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
☐	4. Equipment listing (including a list of electric motors with hp rating).
☐	5. Include a short project description, including a process flow schematic identifying emission points.
☐	6. Process parameters (describe throughput, operating schedule, fuel rate, raw material usage, etc.).
☐	7. Identify control equipment/technology.
☐	8. Any additional information required to calculate emissions.
☐	9. $87 filing fee for each permit unit. *Note: Permit application processing time will be billed at the applicable District hourly labor rate*

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the regional offices listed below. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Northern Region Office
(Serving San Joaquin, Stanislaus, and Merced Counties):

4800 Enterprise Way
Modesto, California 95356-8718
(209) 557-6400
FAX: (209) 557-6475
SBA Hotline: (209) 557-6446

Central Region Office
(Serving Madera, Fresno, and Kings Counties):

1990 E Gettysburg Avenue
Fresno, California 93726-0244
(559) 230-5900
FAX: (559) 230-6061
SBA Hotline: (559) 230-5888

Southern Region Office
(Serving Tulare and Kern Counties):

34946 Flyover Court
Bakersfield, California 93308
(661) 392-5500
FAX: (661) 392-5585
SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form

www.valleyair.org

1. PERMIT TO BE ISSUED TO: Dunn's Inc.

2. MAILING ADDRESS: STREET or P O BOX: 303 N. Ben Maddox Way
CITY: Visalia STATE: CA ZIP CODE: 93292

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 7763 Avenue 280 CITY: Visalia
If a physical address is not available:
ZIP CODE: 93277 1/4 SECTION: TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL? ☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Hot mix asphalt plant

6. S.I.C. CODE OF FACILITY:
2951

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☒ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #s if known, a site map, a Supplemental Application Form if available, and use additional sheets if necessary*)

Raw aggregate is fed into a rotary dryer from an on-site cold feed system. The material is heated to specification temperature to remove moisture and is mixed with liquid asphalt. The asphaltic concrete is discharged into an incline slat conveyor, which is fed into a hot asphalt silo. Waiting trucks are loaded from the hot asphalt silo, weighed, and driven to the paving site.

☒ Yes, a site map is included indicating approximate emission locations and property lines.

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☒ NO *Please provide expected date of installation or modification:* ASAP

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☒ YES *If "Yes", please complete the CEQA Information form:* http://www.valleyair.org/busind/pto/ptoforms/CEQAInformationForm.doc.
☐ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☐ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)? ☐ YES ☒ NO *If yes, NOV/NTC #:*

13. APPLICANT NAME: Mark Dunn
TITLE:
SIGNATURE: DATE:

14. APPLICANT CONTACT INFORMATION:
PHONE #: ( ) -
CELL PHONE #: ( ) -
E-MAIL: mark@dunnsinc.net

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"**H**EALTHY **A**IR **L**IVING (**HAL**) BUSINESS PARTNER"* ☐ *"**I**NSPECT"*

FOR APCD USE ONLY:

DATE STAMPS	FILING FEE RECEIVED:$	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID #:	

Clear Form

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

CEQA Information

The San Joaquin Valley Air Pollution Control District (District) is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the District in clarifying whether or not the project has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document (CEQA Guidelines §15060(a).

PERMIT TO BE ISSUED TO: Dunn's Inc.
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 7763 Avenue 280 Visalia, CA 93277

Section 1: Agency Approvals

	Check "Yes" or "No" as applicable.	**Yes**	**No**
1.	Has a Lead Agency prepared an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☐
2.	Is a Lead Agency in the process of preparing an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☐
	*If "**Yes**" is checked for either question 1 or 2, please provide the following information:* - *Lead Agency name :* Tulare County Resource Mgmt Agency - *Name of Lead Agency contact person:* Hector Guerra - *Type of CEQA document prepared:* Environmental Impact Review (EIR) - *Project reference number:* PSP 18-049 - *If a CEQA Environmental Review document has been prepared for this project, **please attach a copy of the Notice of Determination or the Notice of Exemption*** *If "**No**" is checked for both questions 1 and 2, please attach an explanation*:		

Note 1: If you answered YES to question 1 OR 2 do not complete Section 2 of this form, and please return the completed form to the Air Pollution Control District.

Section 2:	**Project Information**		
Note: If you answered YES to question 1 OR 2 of Section 1 do not complete this section, and please return the completed form to the Air Pollution Control District.		**Yes**	**No**
1.	Would this project result in more than 47 heavy-duty truck (HD) one-way trips per day to and from the facility? (23 heavy-duty truck (HD) round trips per day).	☐	☐
2.	Would this project result in a need for more than 350 new employees?	☐	☐
3.	Would this project result in more than 700 customer trips per day to and from the facility?	☐	☐
4.	Would this project increase the demand for water at the facility by more than 5,000,000 gallons per day?	☐	☒
5.	Would this project require construction of new water conveyance infrastructure *Post-project facility water demand exceeding the capacity of local water purveyor.*	☐	☐
6.	Would this project create a permanent need for new or additional public services for Solid Waste Disposal or Hazardous Waste Disposal? *Post-project waste discharge exceeding the capacity of the local Solid Waste Disposal or Hazardous Waste Disposal.*	☐	☐
7.	Would this project result in noticeable off-site odors that have the potential to generate nuisance complaints?	☐	☐
8.	Would this project include equipment with a noise specification greater than 90 decibels (db)?	☒	☒
9.	Has this project generated any known public concern regarding potential adverse impacts? *Public concern may be interpreted as concerns by local groups at public meetings, adverse media attention such as negative newspapers or other periodical publications, local news programs, environmental justice issues, etc.*	☐	☒
10.	Would this project result in any demolition, excavation, and/or grading/construction activities outside the perimeter of the existing facility?	☐	☒
11.	Would this project result in any demolition, excavating, and/or grading construction activities that encompass an area exceeding 20,000 Square feet (inside or outside the perimeter of the existing facility)?	☐	☒
12.	Is this project part of a larger development activity at the facility that collectively would result in answering YES to any of the questions listed above?	☐	☐

FOR DISTRICT USE ONLY – CEQA ANALYSIS REQUEST

PERMIT	**TECHNICAL SERVICES**
AQE Name:	AQS Name:
Facility Name:	PAS #: CEQA #:
Facility #: Project #:	Project with potential public concern? ☐ Yes ☐ No
Is this an RO project? ☐ Yes ☐ No	Detailed CEQA analysis required? ☐ Yes ☒ No
Project subject to Public Notice? ☐ Yes ☐ No	Indemnification Agreement (IA) required? ☐ Yes ☐ No ☐ N/A Letter of Credit (LOC) required? ☐ Yes ☐ No ☐ N/A
Please summarize or attach the following: - ☐ Copy of application form - ☐ CEQA Analysis Request form - ☐ GHG Determination (>230MT-CO_2e/yr? BPS?) - ☐ Expected date of ATC(s) issuance: __________	- ☐ IA/LOC received - ☐ CEQA paragraph sent to permit engineer - ☐ NOD prepared - ☐ County filing fees District check prepared - ☐ Game and Fish fees District check or proof of payment *(District check prepared after receiving applicant check)* - ☐ CEQA Ready and ok to issue ATC
Date form is forwarded to Tech. Services SVr:	Date form is forwarded back to permit engineer:

Clear Form

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

Concrete Batch Plants

This form must be accompanied by a completed Authority to Construct/Permit to Operate Application form

PERMIT TO BE ISSUED TO: Dunn's Inc.	
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 7763 Avenue 280, Visalia, CA 93277	

EQUIPMENT DESCRIPTION

Batch Plant Data	Manufacturer (if applicable): CON-E-CO	
	Model Number (if applicable):	
	Maximum Rated Horsepower of all electric motors: 25 hp	
	Is the operation powered by an internal combustion engine? [x] No [ ] Yes (Note: If engine is rated at greater than 50 hp an *IC Engine Supplemental Application* form is required.)	
Cement Silo(s) Data	Total Number of Silos: 1	Volume of each silo: 2260 cu. ft. gal or ft^3 (circle one)
	Type of filter: [ ] Fabric Filter [x] Cartridge Filter [ ] Other (please specify):	
Fly Ash Silo(s) Data	Total Number of Silos: 1	Volume of each silo: 2260 cu. ft. gal or ft^3 (circle one)
	Type of filter: [ ] Fabric Filter [x] Cartridge Filter [ ] Other (please specify):	
Silo Control	[x] Yes (Baghouse/Dust Collector supplemental application required) [ ] No	

PROCESS DESCRIPTION

Maximum Cement Silo Loading Throughput	8.5 ton/hr	67.8 ton/day	21,150 ton/yr
Maximum Cement Silo Unloading Throughput	8.5 ton/hr	67.8 ton/day	21,150 ton/yr
Maximum Fly Ash Silo Loading Throughput	8.5 ton/hr	67.8 ton/day	21,150 ton/yr
Maximum Fly Ash Silo Unloading Throughput	8.5 ton/hr	67.8 ton/day	21,150 ton/yr
Maximum Aggregate Throughput	66.1 ton/hr	528.8 ton/day	165,000 ton/yr
Maximum Sand Throughput	66.1 ton/hr	528.8 ton/day	165,000 ton/yr
Maximum Concrete Output	40.1 yd^3/hr	320.5 yd^3/day	100,000 yd^3/yr

Provide an Equipment Listing, Site Plan, and Material Flow Chart (on a separate sheet of paper)	a) Provide an equipment listing to include the manufacturer and model number of all major components. b) Provide a typical Site Plan for a maximum throughput scenario (include all process, control, and transfer equipment). c) Provide a Material Flow Chart for a maximum throughput scenario. (Include all process, control, and transfer equipment, their types, and their maximum ratings. Also include transfer points, stockpiles, and air pollution control methods.

PROCESS DESCRIPTION (Continued)

Is this a "Wet Mix" type plant?	[ ] Yes [ ] No	**Is this a "Transient Mix" dry type plant?**	[ ] Yes [ ] No
Mechanical Cement Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Pneumatic Cement Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Cement Weigh Hopper Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Mechanical Fly Ash Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Pneumatic Fly Ash Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Fly Ash Weigh Hopper Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Mechanical Aggregate Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Water Spray [ ] Other [ ] None	
Mechanical Sand Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Other (please specify) [ ] None	
Sand and Aggregate Weigh Hopper Transfer Points	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Water Spray [ ] Other [ ] None	
Concrete Transfer Points (Truck Loading)	Number of Points: ______	Quantity of transfer points controlled by: [ ] Fabric Filter [x] Bin Vent Filter [ ] Water Spray [ ] Shroud [ ] None	

PLANT LAYOUT DESCRIPTION

Total Area of Unpaved Roads within the Plant	Area:_______acre or ft^2 (circle one)	Type of control: [ ] Water [ ] Oil/Dust Palliate [ ] Other (please specify):
Total Area of Aggregate Piles within the Plant	Area:_______acre or ft^2 (circle one)	Type of control: [ ] Water [ ] Physical Covering [ ] Retaining Walls [ ] Other (please specify):

HEALTH RISK ASSESSMENT DATA

Operating Hours	Maximum Operating Schedule: 14 hours per day, and 4,368 hours per year		
Receptor Data	Distance to nearest Residence	1,000 feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest apartment, house, dormitory, etc.
	Direction to nearest Residence	East	Direction from the stack to the receptor, i.e. North or South.
	Distance to nearest Business	2,000 feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest office building, factory, store, etc.
	Direction to nearest Business	East	Direction from the stack to the receptor, i.e. North or South.
Stack Parameters	Release Height	feet above grade	
	Stack Diameter	inches at point of release	
	Rain Cap	[ ] Flapper-type [ ] Fixed-type [ ] None [ ] Other:	
	Direction of Flow	[ ] Vertically Upward [ ] Horizontal [ ] Other: ° from vert. or ° from horiz.	
Exhaust Data	Flowrate:________acfm	Temperature:________°F	
Facility Location	[ ] Urban (area of dense population) [x] Rural (area of sparse population)		

Describe any additional air pollution control equipment or technologies, including control efficiencies, on a separate sheet and submit it along with this form.

FOR DISTRICT USE ONLY

Date:	**FID:**	**Project:**	**Public Notice: Y N**
Comments:			

San Joaquin Valley Air Pollution Control District

Supplemental Application Form

PROCESSES SERVED BY A BAGHOUSE/DUST COLLECTOR

This form must be accompanied by a completed Authority to Construct/Permit to Operate Application form

PERMIT TO BE ISSUED TO: Dunn's Inc.
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 7763 Avenue 280, Visalia, CA 93277

BAGHOUSE/DUST COLLECTOR DESCRIPTION

Baghouse/Dust Collector Data	Manufacturer: CON-E-CO	
	Model No.: PJ-980D	Serial No.:
	PM_{10} Control Efficiency: 99.9 (%) (if available from the manufacturers guarantee)	
	Exhaust PM_{10} Emission Concentration(gr/dscf): (if available from the manufacturers guarantee)	
	Differential Pressure Gage [ ] Yes [ ] No	Manufacturer's Recommended Differential Pressure Operating Range: ______________ to ________________ inches W.C.
Filter Data	Type: [x] Bag/Tube [ ] Cartridge [ ] Envelope [ ] HEPA/Flat [ ] Sock Filter [ ] Other:____________________________	
	Fabric: [ ] Cotton [ ] Polypropylene [ ] Polyester [ ] Fiberglass [ ] Nomex [ ] Teflon [ ] Other:____________________________	
	Number of Bags/Filters: 66	Total Cloth Area: 980 (sq. ft.)
	Diameter or Width of Bag/Filter: 6 (in.)	Length of Bag/Filter: 120 (in.)
	Filter Cleaning Method: [ ] Mechanical Shaker [ ] Reverse Air Flow [x] Pulse Jet	
Blower/Fan Data	Manufacturer:	Model No.
	Power Rating: 15 (Horsepower)	Air Flow Rate: 5880 (dscfm)

PROCESS INFORMATION

Process served by baghouse/duct collector: Concrete Mixer Truck
Type of material collected by the baghouse/dust collector: concrete/fly ash and aggregate dust
Maximum quantity of material collected by the baghouse/dust collector: ___________0.23___________lb/day
Maximum process weight for operation served by the baghouse/dust collector: __________596.6_________tons/day
Please note, each permit is required by District Rule 2201 to have a daily emission limit (DEL). The information provided above for maximum process rate and operating schedule may be used as an enforceable limiting condition for each Authority to Construct or Permit to Operate that will be issued for the proposed project.

Please Continue on Reverse Side

EQUIPMENT SERVED BY THE BAGHOUSE/DUST COLLECTOR

Description Indicate the type of equipment that will be served by the baghouse/dust collector, such as: Rip saw, drill, router, hammermill, grain cleaner, storage bin, etc. (attach additional sheets if needed.	**Manufacturer**	**Model No.**	**Power Rating (Horsepower) or Storage Capacity (Cubic Feet)** Indicate the horsepower rating if the equipment is powered by an electric motor or indicate the maximum storage capacity if the equipment is a storage bin/silo.
Concrete Mixer Truck			

HEALTH RISK ASSESSMENT DATA

Operating Hours	Maximum Operating Schedule: __________ hours per day, and ___________ hours per year		
	☒ Outdoors ☐ Indoors (if indoors, see note 1)		
Receptor Data	Distance to nearest Residence	_____ feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest apartment, house, dormitory, etc.
	Direction to nearest Residence	___________	Direction from the stack to the receptor, i.e. Northeast or South.
	Distance to nearest Business	_____ feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest office building, factory, store, etc.
	Direction to nearest Business	___________	Direction from the stack to the receptor, i.e. North or Southwest.
Stack Parameters	Release Height	_________ feet above grade	
	Stack Diameter	_________ inches at point of release	
	Rain Cap	☐ Flapper-type ☐ Fixed-type ☐ None ☐ Other: ______________________	
	Direction of Flow	☐ Vertically Upward ☐ Horizontal ☒ Other: Downward _____° from vert. or _____° from horiz.	
Exhaust Data	Flowrate: _________________ acfm	Temperature: ______________ °F	
Facility	☐ Urban (area of dense population) ☒ Rural (area of sparse population)		

3777 LONG BEACH BLVD, ANNEX BUILDING. LONG BEACH CA 90807
altaenviron.com o.562.495.5777 f.562.495.5877

September 6, 2019

Dunn's Inc.
303 N. Ben Maddox Way
Visalia, 93292

Attention: Mark Dunn

Subject: San Joaquin Valley APCD Concrete and Asphalt Recycling Plant Permit Application

Dear Mark:

Enclosed is your copy and the original permit application package for your concrete and asphalt recycling plant with San Joaquin Valley APCD.

Please sign the originals and forward the original to the San Joaquin Valley APCD, along with a check in the amount of $87.00 to cover the filing fee. In addition, every applicant who files an application for an Authority to Construct or a Permit to Operate with the District shall pay an engineering evaluation fee for the processing of the application. The fee shall be calculated using the staff hours expended and the prevailing weighted labor rate. All filing fees paid shall be credited towards the evaluation fee.

If you have any questions, please feel free to call me at (562) 495-5777.

Sincerely,

Diana Nguyen
Alta Environmental

ALTA ENVIRONMENTAL
3777 LONG BEACH BLVD, ANNEX BUILDING. LONG BEACH CA 90807
altaenviron.com o.562.495.5777 f.562.495.5877

September 6, 2019

San Joaquin Valley Air Pollution Control District
1900 East Gettysburg Avenue
Fresno, CA 93726-0244

Attention: Permit Services

Subject: Dunn's Inc.
Concrete and Asphalt Recycling Plant Permit Application

Attached you will find the application package which covers the permit to construct for Dunn's Inc. concrete and asphalt recycling plant. You will also find a check in the amount of $87.00 to cover the filing fees.

We trust the information provided will allow you to complete your evaluation. If you have any questions, please feel free to give us a call at (562) 495-5777.

Best Regards,

Diana Nguyen
Alta Environmental

cc: Mark Dunn, Dunn's Inc.

Alta Environmental an NV5 Company
3777 Long Beach Boulevard, Annex Building
Long Beach, CA 90807
T: (562) 495-5777   F: (562) 495-5877

FEE SCHEDULE WORK SHEET

(For Permit Processing in Accordance With Rule 3010)

Permits to be issued to: Dunn's Inc.

Address: 303 N. Maddox Way

City, State, Zip: Visalia, CA 93292

Quantity of Identical Units	Equipment/Process	Fee Schedule	Permit Application Fee	=	Total
1	Concrete & asphalt recycling	--	$87.00	=	$87.00
		--		=	

Total Permit Processing Fee Due $87.00

Comments:

APPLICATION TO THE
SAN JOAQUIN VALLEY AIR
POLLUTION CONTROL DISTRICT

1900 East Gettysburg Avenue
Fresno, CA 93726-0244

PERMIT TO CONSTRUCT FOR A CONCRETE AND ASPHALT RECYCLING PLANT

Prepared For:

Dunn's Inc.
303 N. Ben Maddox Way
Visalia, CA 93292

Project No.: DUNN-19-8904
Contact: Diana Nguyen
Date: July 23, 2019

Alta Environmental an NV5 Company
3777 Long Beach Boulevard Annex Building
Long Beach, CA 90807 United States of America
T: 562-495-5777 F: 562-495-5877
www.altaenviron.com

SUMMARY

Dunn's Inc. is requesting a Permit to Construct a stationary concrete and asphalt recycling plant. This plant will be powered by electric grid power. This application will show that the emissions are less than the District's Rule 2201 (4.5.3) annual thresholds therefore exempting the plant from offsets. The plant emissions are below the District's Rule 2201 (5.4) daily public notice thresholds for all pollutants.

This plant will be equipped with the Best Available Control Technology (BACT) in compliance with the District's New Source Review Regulation.

TABLE OF CONTENTS

TABLE OF CONTENTS *(Continued)*

ALTA ENVIRONMENTAL

PART I – PROJECT DESCRIPTION

A. Business Background

1. Name

    Dunn's Inc.

2. Owner

    Dunn's Inc.
    303 N. Ben Maddox Way
    Visalia, CA 93292

3. Contact

    Mark Dunn
    (559) 734-5373

4. Entitlement

    Equipment to be owned and operated by Dunn's Equipment, Inc.

5. Business Description

    Concrete and Asphalt Recycling Plant

B. Type of Application

Permit to Construct

C. Description of Facility

1. Location

    7763 Avenue 280
    Visalia, CA 93277

2. General Purpose of Facility

    The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base rock.

D. Description of Process

1. General Description of each Process Line

a.) Concrete and Asphalt Recycling Plant

The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base. It is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site.

2. Maximum Production Schedule

The concrete and asphalt recycling plant will produce a maximum of 96.2 tons of recycled base rock per day and 30,000 tons per year.

3. Equipment List and Horsepower Schedule

Item	Description	HP
1	Impact Crusher Powerscreen 320SR Tier 4	345
2	Stacker Powerscreen M95 Tier 4	73

E. Control Equipment

1. Particulate Matter Control

The District New Source Review Regulation specifies that new equipment will be in compliance with the BACT guidelines.

Material will be kept sufficiently moist to control particulate via the use of water spray.

PART II – REGULATORY ANALYSIS

A. Analysis of Emissions Restrictions

District prohibitory rules limit the emissions of various pollutants from all sources in the District. The specific rules that apply to the proposed project are discussed below. The limitations in these rules will be met through the application of BACT. BACT requirements are discussed in detail in Section "B" of this part of the application.

1. Fugitive Dust

   No person shall perform any outdoor handling, storage and transport of bulk materials unless the appropriate control measures are sufficiently implemented to limit visible dust emissions to 20% opacity as set forth in Rule 8031 and Table 8031-1. Compliance with the rule will be achieved through the use of water.

2. Rule 4101 Visible Emissions

   The opacity of visible emissions will be limited by Rule 4101 not to exceed No. 1 of the United States Bureau of Mines Ringelmann Chart, or to the equivalent opacity. Ringelmann No. 1 corresponds to 20% opacity. Since BACT will limit opacity of 5%, compliance with Rule 4101 will be achieved.

3. Rule 4001 New Source Performance Standards (NSPS)

   This facility is subject to the requirements of NSPS Subpart OOO, Nonmetallic Mineral Processing Plants. This facility will demonstrate compliance with the performance standards of Subpart OOO within 60 days of reaching maximum production, but no later than 180 days after start-up.

   All affected facilities are manufactured after April 22, 2008, therefore are subject to 7% opacity for belts and screens and 12% opacity for belt conveyors.

4. Rule 4102 Public Nuisance

No person shall discharge from any source whatsoever such quantities of air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger to comfort, repose, health or safety of any such person or the public, or which cause or have a natural tendency to cause injury or damage to business or property.

This operation is not expected to produce a public nuisance or annoyance.

5. Federally-Mandated Operation Permit

Since this facility's potential emissions do not exceed any major source thresholds per year per Rule 2201, this facility is not a major source, and Rule 2520 does not apply (See Part III (D) of the application).

B. Analysis of New Source Review Requirements/BACT

In accordance with the requirements of Rule 2201.4.1, (BACT), Dunn's Inc has identified the BACT measures that apply to the facility.

1. Aggregate Processing

Water fog sprays will be used to minimize particulate emissions from Crushing and Screening.

2. Transfer Point

Water sprays will be used to minimize particulate emissions from transfer points between conveyors and other loading operations when necessary.

C. Offsets

Since this facility is below the offset threshold as in Rule 2201, Section 4.5.3, no offsets will be required (See Part III (C) of the application).

D. Public Notification

None of the daily emissions from criteria pollutants will be above 100 pounds per day. Therefore, public notice will not be necessary according to Rule 2201, Section 5.4 (See Part III (C) of the application).

PART III – ESTIMATED EMISSIONS

A. Emissions Estimates for Concrete and Asphalt Recycling Plant

The emissions estimates for the Concrete and Asphalt Recycling Plant were calculated below. The emissions factors were taken from EPA AP-42 Table 11.19.2-2 (Refer to Attachment "A").

Concrete and Asphalt Processing

Emission Point	Description	Throughput (tons/hour)	×	PM_{10} Emissions Factor (lbs/ton)	=	PM_{10} (lbs/hour)
1	Loader to Impact Crusher	15.6		0.000046		0.0007
2	Impact Crusher	15.6		0.00054		0.0084
3	Impact Crusher to Stacker	15.6		0.000046		0.0007
4	Stacker to Stockpiles	15.6		0.000046		0.0007
		Total PM_{10} Emissions (lb/hour)				0.0106
		Rubble Throughput (tons/hour)			÷	15.6
		Plant PM_{10} Emission Factor (lbs/ton)				6.79E-4

Aggregate Throughput	×	PM_{10} Emissions Rate (lbs/ton)	=	PM_{10} Emissions
96.2 tons/day		6.79E-4		0.07 lbs/day
30,000 tons/year		6.79E-4		20.4 lbs/year

A. Emissions Estimates for Concrete and Asphalt Recycling Plant (continued)

Stockpiling

Annual Throughput	×	PM_{10} Emission Factor (lb/ton)	=	Annual Emissions (lb/year)	=	Annual Emissions (ton/year)
30,000		0.0165		643.5		0.32

Annual Emissions (lb/year)	÷	Operating Schedule (days/yr)	=	PM_{10} Daily Emissions (lb/day)
643.5		312		2.06

B. Stockpiles

There will be a total of 0.5 acres of stockpile area. In accordance with San Joaquin Valley aggregate plant processing policy SSP-1610-10, 80% control will be used for water.

Total (Acres)	×	PM_{10} Emission Factor (lb/acre-day)	×	Control Factor	=	PM_{10} Daily Emissions (lb/day)
0.5		5.27		0.2		0.527

Daily PM_{10} Emissions (lb/day)	×	Operating Schedule (days/yr)	=	PM_{10} Yearly Emissions (lb/yr)	=	PM_{10} Daily Emissions (tons/yr)
0.527		365		192		0.096

C. Facility Emissions Summary/Emissions Rule Evaluation

Pollutant	Aggregate Emissions (lbs/day)	+	Stockpile (lbs/day)	=	Overall Emissions (lbs/day)	≤	Rule 2201 5.4 Public Notice Limit (lbs/day)
PM_{10}	2.13		0.53		2.66	<	100

Pollutant	Aggregate Emissions (lbs/year)	+	Stockpile (lbs/yr)	=	Overall Emissions (lbs/year)	=	Overall Emissions (tons/year)	≤	Rule 2201 4.5.3 Offset Limits (tons/year)
PM_{10}	663.9		192		885.9		0.43	<	14.6

PART IV – ANALYSIS OF PERMIT RESTRICTIONS

Anticipated production and fuel limits are listed below:

Concrete and asphalt processing through the plant should be limited to 96.2 tons per day and 30,000 tons per year.

ATTACHMENT "A"

AP-42 EMISSION FACTORS
(TABLE 11.19.2-2)

Table 11.19.2-2 (English Units). EMISSION FACTORS FOR CRUSHED STONE PROCESSING OPERATIONS (lb/Ton)[a]

Source [b]	Total Particulate Matter [r,s]	EMISSION FACTOR RATING	Total PM-10	EMISSION FACTOR RATING	Total PM-2.5	EMISSION FACTOR RATING
Primary Crushing (SCC 3-05-020-01)	ND		ND[n]		ND[n]	
Primary Crushing (controlled) (SCC 3-05-020-01)	ND		ND[n]		ND[n]	
Secondary Crushing (SCC 3-05-020-02)	ND		ND[n]		ND[n]	
Secondary Crushing (controlled) (SCC 3-05-020-02)	ND		ND[n]		ND[n]	
Tertiary Crushing (SCC 3-050030-03)	0.0054[d]	E	0.0024[o]	C	ND[n]	
Tertiary Crushing (controlled) (SCC 3-05-020-03)	0.0012[d]	E	0.00054[p]	C	0.00010[q]	E
Fines Crushing (SCC 3-05-020-05)	0.0390[e]	E	0.0150[e]	E	ND	
Fines Crushing (controlled) (SCC 3-05-020-05)	0.0030[f]	E	0.0012[f]	E	0.000070[q]	E
Screening (SCC 3-05-020-02, 03)	0.025[c]	E	0.0087[l]	C	ND	
Screening (controlled) (SCC 3-05-020-02, 03)	0.0022[d]	E	0.00074[m]	C	0.000050[q]	E
Fines Screening (SCC 3-05-020-21)	0.30[g]	E	0.072[g]	E	ND	
Fines Screening (controlled) (SCC 3-05-020-21)	0.0036[g]	E	0.0022[g]	E	ND	
Conveyor Transfer Point (SCC 3-05-020-06)	0.0030[h]	E	0.00110[h]	D	ND	
Conveyor Transfer Point (controlled) (SCC 3-05-020-06)	0.00014[i]	E	4.6×10^{-5}[i]	D	1.3×10^{-5}[q]	E
Wet Drilling - Unfragmented Stone (SCC 3-05-020-10)	ND		8.0×10^{-5}[j]	E	ND	
Truck Unloading -Fragmented Stone (SCC 3-05-020-31)	ND		1.6×10^{-5}[j]	E	ND	
Truck Loading - Conveyor, crushed stone (SCC 3-05-020-32)	ND		0.00010[k]	E	ND	

a. Emission factors represent uncontrolled emissions unless noted. Emission factors in lb/Ton of material of throughput. SCC = Source Classification Code. ND = No data.

b. Controlled sources (with wet suppression) are those that are part of the processing plant that employs current wet suppression technology similar to the study group. The moisture content of the study group without wet suppression systems operating (uncontrolled) ranged from 0.21 to 1.3 percent, and the same facilities operating wet suppression systems (controlled) ranged from 0.55 to 2.88 percent. Due to carry over of the small amount of moisture required, it has been shown that each source, with the exception of crushers, does not need to employ direct water sprays. Although the moisture content was the only variable measured, other process features may have as much influence on emissions from a given source. Visual observations from each source under normal operating conditions are probably the best indicator of which emission factor is most appropriate. Plants that employ substandard control measures as indicated by visual observations should use the uncontrolled factor with an appropriate control efficiency that best reflects the effectiveness of the controls employed.

c. References 1, 3, 7, and 8

d. References 3, 7, and 8

e. Reference 4

f. References 4 and 15

g. Reference 4

h. References 5 and 6

i. References 5, 6, and 15

j. Reference 11

k. Reference 12

l. References 1, 3, 7, and 8

m. References 1, 3, 7, 8, and 15

n. No data available, but emission factors for PM-10 for tertiary crushers can be used as an upper limit for primary or secondary crushing

o. References 2, 3, 7, 8

p. References 2, 3, 7, 8, and 15

q. Reference 15

r. PM emission factors are presented based on PM-100 data in the Background Support Document for Section 11.19.2

s. Emission factors for PM-30 and PM-50 are available in Figures 11.19.2-3 through 11.19.2-6.

Note: Truck Unloading - Conveyor, crushed stone (SCC 3-05-020-32) was corrected to Truck Loading - Conveyor, crushed stone (SCC 3-05-020-32). October 1, 2010.

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San Joaquin Valley Air Pollution Control District

www.valleyair.org

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate Application.

Checklist for Complete Applications (include the following)	
☐	1. A signed Authority to Construct/Permit to Operate Application.
☐	2. Include a site map that identifies the location(s) where the new/modified unit(s) will operate and the approximate property lines. This is required for any proposal for new equipment, an increase in emissions from existing units, or change in location of emission points.
☐	3. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
☐	4. Equipment listing (including a list of electric motors with hp rating).
☐	5. Include a short project description, including a process flow schematic identifying emission points.
☐	6. Process parameters (describe throughput, operating schedule, fuel rate, raw material usage, etc.).
☐	7. Identify control equipment/technology.
☐	8. Any additional information required to calculate emissions.
☐	9. $87 filing fee for each permit unit. *Note: Permit application processing time will be billed at the applicable District hourly labor rate*

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the regional offices listed below. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Northern Region Office
(Serving San Joaquin, Stanislaus, and Merced Counties):

4800 Enterprise Way
Modesto, California 95356-8718
(209) 557-6400
FAX: (209) 557-6475
SBA Hotline: (209) 557-6446

Central Region Office
(Serving Madera, Fresno, and Kings Counties):

1990 E Gettysburg Avenue
Fresno, California 93726-0244
(559) 230-5900
FAX: (559) 230-6061
SBA Hotline: (559) 230-5888

Southern Region Office
(Serving Tulare and Kern Counties):

34946 Flyover Court
Bakersfield, California 93308
(661) 392-5500
FAX: (661) 392-5585
SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form
www.valleyair.org

1. PERMIT TO BE ISSUED TO: Dunn's Inc.

2. MAILING ADDRESS: STREET or P O BOX: 303 N. Ben Maddox Way
CITY: Visalia STATE: CA ZIP CODE: 93292

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 7763 Avenue 280 CITY: Visalia
If a physical address is not available:
ZIP CODE: 93277 1/4 SECTION: TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL? ☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Hot mix asphalt plant

6. S.I.C. CODE OF FACILITY:
2951

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☒ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #s if known, a site map, a Supplemental Application Form if available, and use additional sheets if necessary*)

Raw aggregate is fed into a rotary dryer from an on-site cold feed system. The material is heated to specification temperature to remove moisture and is mixed with liquid asphalt. The asphaltic concrete is discharged into an incline slat conveyor, which is fed into a hot asphalt silo. Waiting trucks are loaded from the hot asphalt silo, weighed, and driven to the paving site.

☒ Yes, a site map is included indicating approximate emission locations and property lines.

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*____________
☒ NO *Please provide expected date of installation or modification:* ASAP

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☒ YES *If "Yes", please complete the CEQA Information form: http://www.valleyair.org/busind/pto/ptoforms/CEQAInformationForm.doc.*
☐ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☐ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)? ☐ YES ☒ NO *If yes, NOV/NTC #:*____________

13. APPLICANT NAME: Mark Dunn
TITLE:
SIGNATURE: DATE:

14. APPLICANT CONTACT INFORMATION:
PHONE #: ( ) -
CELL PHONE #: ( ) -
E-MAIL: mark@dunnsinc.net

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"**H**EALTHY **A**IR **L**IVING (**HAL**) BUSINESS PARTNER"* ☐ *"**I**NSPECT"*

FOR APCD USE ONLY:

DATE STAMPS	FILING FEE RECEIVED:$	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID #:	

Clear Form

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

CEQA Information

The San Joaquin Valley Air Pollution Control District (District) is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the District in clarifying whether or not the project has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document (CEQA Guidelines §15060(a).

PERMIT TO BE ISSUED TO: Dunn's Inc.
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 7763 Avenue 280 Visalia, CA 93277

Section 1: Agency Approvals

	Check "Yes" or "No" as applicable.	**Yes**	**No**
1.	Has a Lead Agency prepared an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☐
2.	Is a Lead Agency in the process of preparing an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☐
	*If "**Yes**" is checked for <u>either</u> question 1 or 2, please provide the following information:* - *Lead Agency name :* Tulare County Resource Mgmt Agency - *Name of Lead Agency contact person:* Hector Guerra - *Type of CEQA document prepared:* Environmental Impact Review (EIR) - *Project reference number:* PSP 18-049 - *If a CEQA Environmental Review document has been prepared for this project, **please attach a <u>copy of the Notice of Determination or the Notice of Exemption</u>*** *If "**No**" is checked for <u>both</u> questions 1 and 2, please attach an explanation:*		

<u>Note 1</u>: If you answered YES to question 1 OR 2 do not complete Section 2 of this form, and please return the completed form to the Air Pollution Control District.

Section 2: Project Information

Note: If you answered YES to question 1 OR 2 of Section 1 do not complete this section, and please return the completed form to the Air Pollution Control District.		**Yes**	**No**
1.	Would this project result in more than 47 heavy-duty truck (HD) one-way trips per day to and from the facility? (23 heavy-duty truck (HD) round trips per day).	☐	☐
2.	Would this project result in a need for more than 350 new employees?	☐	☐
3.	Would this project result in more than 700 customer trips per day to and from the facility?	☐	☐
4.	Would this project increase the demand for water at the facility by more than 5,000,000 gallons per day?	☐	☒
5.	Would this project require construction of new water conveyance infrastructure *Post-project facility water demand exceeding the capacity of local water purveyor.*	☐	☐
6.	Would this project create a permanent need for new or additional public services for Solid Waste Disposal or Hazardous Waste Disposal? *Post-project waste discharge exceeding the capacity of the local Solid Waste Disposal or Hazardous Waste Disposal.*	☐	☐
7.	Would this project result in noticeable off-site odors that have the potential to generate nuisance complaints?	☐	☐
8.	Would this project include equipment with a noise specification greater than 90 decibels (db)?	☒	☒
9.	Has this project generated any known public concern regarding potential adverse impacts? *Public concern may be interpreted as concerns by local groups at public meetings, adverse media attention such as negative newspapers or other periodical publications, local news programs, environmental justice issues, etc.*	☐	☒
10.	Would this project result in any demolition, excavation, and/or grading/construction activities outside the perimeter of the existing facility?	☐	☒
11.	Would this project result in any demolition, excavating, and/or grading construction activities that encompass an area exceeding 20,000 Square feet (inside or outside the perimeter of the existing facility)?	☐	☒
12.	Is this project part of a larger development activity at the facility that collectively would result in answering YES to any of the questions listed above?	☐	☐

FOR DISTRICT USE ONLY – CEQA ANALYSIS REQUEST

PERMIT	**TECHNICAL SERVICES**
AQE Name:	AQS Name:
Facility Name:	PAS #: CEQA #:
Facility #: Project #:	Project with potential public concern? ☐ Yes ☐ No
Is this an RO project? ☐ Yes ☐ No	Detailed CEQA analysis required? ☐ Yes ☒ No
Project subject to Public Notice? ☐ Yes ☐ No	Indemnification Agreement (IA) required? ☐ Yes ☐ No ☐ N/A Letter of Credit (LOC) required? ☐ Yes ☐ No ☐ N/A
Please summarize or attach the following: - ☐ Copy of application form - ☐ CEQA Analysis Request form - ☐ GHG Determination (>230MT-CO_2e/yr? BPS?) - ☐ Expected date of ATC(s) issuance: __________	- ☐ IA/LOC received - ☐ CEQA paragraph sent to permit engineer - ☐ NOD prepared - ☐ County filing fees District check prepared - ☐ Game and Fish fees District check or proof of payment *(District check prepared after receiving applicant check)* - ☐ CEQA Ready and ok to issue ATC
Date form is forwarded to Tech. Services SVr:	Date form is forwarded back to permit engineer:

Clear Form

APPENDIX A.4

GREENHOUSE GAS ANALYSIS

November 21, 2019

Re: Greenhouse Gas Analysis for Proposed Dunn, Inc. Project

To Whom it May Concern,

Greenhouse gas (GHG) emissions from the Proposed Dunn, Inc. Project were calculated using methodology and emission factors from the United States Environmental Protection Agency (USEPA) Emission Factors for Greenhouse Gas Inventories (March 2018) and the California Air Resource Board's (CARB's) EMFAC2017 Model. GHG emissions from the various sources of the project are summarized in the table below. All values are in metric tons per year (mtpy). Detailed emission calculations are provided as an Attachment.

Source	CO2	CH4	N2O	CO2e
HMA Dryer	36,242	1.77	0.35	36,391
HMA Oil Heater	537	0.03	0.01	539
Truck Running Exhaust	79	<0.01	0.01	82
Truck Idling Exhaust	167	<0.01	0.03	175
Off-Road Equipment	692	0.04	0.02	698
Total				37,886

SIGNATORY

For and on behalf of Alta Environmental

Chris Waller
Director of EHS & Air

Attachments: GHG Emission Calculation Tables

Alta Environmental | an NV5 Company
3777 Long Beach Boulevard Annex Building Long Beach CA 90807 United States of America
T (562) 495 5777 F (562) 495 5877 Toll-free (800) 777-0605 altaenviron.com

Greenhouse Gas Emission Calculations

Summary (mtpy)

Source	CO2	CH4	N2O	CO2e
HMA Dryer	36,242	1.77	0.35	36,391
HMA Oil Heater	537	0.03	0.01	539
Truck Running Exhaust	79	0.00	0.01	82
Truck Idling Exhaust	167	0.00	0.03	175
Off-Road Equipment	692	0.04	0.02	698
			Total:	37,886

GWP		
CO2	CH4	N2O
1	25	298

HMA Dryer

Dryer Heat Input	135	mmBtu/hr

Pollutant	EF	EF	Hours	Emissions	
	(kg/mmbtu)	(kg/hr)	(hr/yr)	(kg/yr)	(mtpy)
CO2	61.4600	8,297.10	4,368	36,241,733	36,242
CH4	0.0030	0.41	4,368	1,769	2
N2O	0.0006	0.08	4,368	354	0

- https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf

Oil Heater

Oil Heater Input	2	mmBtu/hr

Pollutant	EF	EF	Hours	Emissions	
	(kg/mmbtu)	(kg/hr)	(hr/yr)	(kg/yr)	(mtpy)
CO2	61.4600	122.92	4,368	536,915	537
CH4	0.0030	0.01	4,368	26	0
N2O	0.0006	0.00	4,368	5	0

- https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf

Trucks Running

VMT T7	19,808	VMT/yr
VMT T6	45,400	VMT/yr

Pollutant	EF	VMT	Emissions	
	(g/mi)	(VMT/yr)	(kg/yr)	(mtpy)
T7				
CO2	1,434.53	19,808	28,415.215	28.415
CH4	0.0050	19,808	0.098	0.000
N2O	0.2255	19,808	4.466	0.004
T6				
CO2	1,108.73	45,400	50,336.470	50.336
CH4	0.0109	45,400	0.495	0.000
N2O	0.1743	45,400	7.912	0.008

- EMFAC2017, Sceanrio Year 2017, EMFAC2007 Categories

Trucks Idling

Trucks T7	9,904	trucks/yr
Trucks T6	22,700	trucks/yr

Pollutant	EF	Vehicles	Emissions	
	(g/veh)	(veh/yr)	(kg/yr)	(mtpy)
T7				
CO2	14,905.807	9,904	147,627.108	147.627
CH4	0.287	9,904	2.838	0.003
N2O	2.343	9,904	23.205	0.023
T6				
CO2	864.829	22,700	19,631.611	19.632
CH4	0.006	22,700	0.130	0.000
N2O	0.136	22,700	3.086	0.003

- EMFAC2017, Sceanrio Year 2017, EMFAC2007 Categories

Off-Road Equipment

Emission Factors

	CO2	CH4	N2O	
g/gal	10,210.00	0.57	0.26	
mmbtu/gal	0.138	0.138	0.138	
g/mmbtu	73,985.51	4.13	1.88	
btu/hp-hr	7,000	7,000	7,000	- AP-42
g/hp-hr	517.899	0.029	0.013	

Pollutant	EF	HP	Hours	Emissions	
	(g/hp-hr)	(bhp)	(hr/yr)	(kg/yr)	(mtpy)
Rubber Tired Loader					
CO2	517.899	460	2,496	594,630	594.630
CH4	0.029	460	2,496	33	0.033
N2O	0.013	460	2,496	15	0.015
Skid Steer Loader					
CO2	517.899	75	2,496	96,951	96.951
CH4	0.029	75	2,496	5	0.005
N2O	0.013	75	2,496	2	0.002

- https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf

APPENDIX A.5

AMBIENT AIR QUALITY ASSESSMENT DETERMINATION

Ambient Air Quality Analysis Determination

Construction Emissions

		Emissions (tpy)						Emissions (lb/day)					
Construction Phase	**Working Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Site Preparation	10	0.021	0.212	0.111	0.000	0.102	0.060	4.19	42.50	22.28	0.04	20.49	12.02
Grading	30	0.069	0.754	0.492	0.001	0.136	0.082	4.57	50.29	32.81	0.06	9.08	5.45
Building Construction	174	0.386	3.034	2.860	0.009	0.511	0.209	4.43	34.87	32.88	0.10	5.87	2.40
Paving	20	0.035	0.141	0.153	0.000	0.009	0.007	3.55	14.13	15.28	0.03	0.94	0.74
Architectural Coating	20	0.500	0.019	0.045	0.000	0.009	0.003	49.98	1.94	4.49	0.01	0.90	0.32
							Max:	49.98	50.29	32.88	0.10	20.49	12.02
							Exceeds 100 lb/day?	No	No	No	No	No	No

Operational Emissions - Permitted

		Emissions (tpy)						Emissions (lb/day)					
Source	**Working Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
Concrete Batch Plant	312	--	--	--	--	1.440	1.440	--	--	--	--	9.23	9.23
RAP Processing Plant	312	--	--	--	--	0.023	0.023	--	--	--	--	0.15	0.15
HMA Dryer	312	0.820	1.540	9.160	14.430	1.730	1.730	5.26	9.87	58.72	92.50	11.09	11.09
HMA Oil Heater	312	0.012	0.595	0.149	0.214	0.013	0.013	0.08	3.81	0.96	1.37	0.08	0.08
HMA Cold Feed RAP	312	--	--	--	--	0.055	0.055	--	--	--	--	0.36	0.36
HMA Silo Filling	312	0.914	--	0.089	--	0.002	0.002	5.86	--	0.57	--	0.01	0.01
HMA Silo Loadout	312	0.312	--	0.101	--	0.039	0.039	2.00	--	0.65	--	0.25	0.25
HMA Oil Tanks	365	0.511	--	--	--	--	--	2.80	--	--	--	--	--
							Total:	15.99	13.69	60.89	93.87	21.17	21.17
							Exceeds 100 lb/day?	No	No	No	No	No	No

Operational Emissions - Unpermitted

		Emissions (tpy)						Emissions (lb/day)					
Source	**Working Days**	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**	**ROG**	**NOx**	**CO**	**SO2**	**PM10**	**PM2.5**
HMA Storage Pile	365	--	--	--	--	1.240	1.240	--	--	--	--	6.79	6.79
Concrete Storage Pile	365	--	--	--	--	1.650	1.650	--	--	--	--	9.04	9.04
RAP Storage Pile	365	--	--	--	--	0.320	0.320	--	--	--	--	1.75	1.75
Truck Exhaust	312	0.096	1.177	0.979	0.003	0.008	0.008	0.62	7.55	6.28	0.02	0.05	0.05
Truck Fugitive Dust	312	--	--	--	--	0.207	0.207	--	--	--	--	1.33	1.33
Off Road Equipment	312	0.113	0.243	2.230	--	0.008	0.007	0.73	1.56	14.29	--	0.05	0.05
							Total:	1.34	9.10	20.57	0.02	19.02	19.02
							Exceeds 100 lb/day?	No	No	No	No	No	No

Total Operations - Permitted and Unpermitted:	17.34	22.79	81.46	93.89	40.19	40.19
Exceeds 100 lb/day?	No	No	No	No	No	No

APPENDIX B

BIOLOGICAL EVALUATION

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

BIOLOGICAL EVALUATION
VISALIA CONCRETE/ASPHALT BATCH PLANT PROJECT
TULARE COUNTY, CALIFORNIA

Prepared by:

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Director of Ecological Services

Jeff Gurule, Senior Project Manager and Staff Ecologist

Prepared for:

Richard Walker
4 Creeks, Inc. Civil Engineering
324 S. Santa Fe St., Suite A
Visalia, CA

September 20, 2018 PN 2293-01

EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted a biological resources investigation of the Visalia Concrete/Asphalt Batch Plant Project site within unincorporated Tulare County, and evaluated likely impacts to such resources resulting from project implementation. The project consists of the development of a concrete batch plant, concrete and asphalt recycling plant, and hot mix asphalt plant on a 20-acre parcel. On July 17, 2018, LOA ecologist Jeff Gurule surveyed the project site for biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law.

Two land uses/biotic habitats have been identified within the project site, comprising agricultural field and ruderal/developed. Both of these land use/biotic habitats have experienced some level of human disturbance or modification. The project site sits within a region of Tulare County dominated by agricultural uses.

The project site does not provide suitable habitat for locally occurring special status plant species; hence, the proposed project will not impact special status plants. Project impacts will also be less than significant for wildlife movement corridors, natural communities of special concern or other sensitive habitats, downstream water quality, federally regulated waters, and many special status animal species that are absent or unlikely to occur within the project site or that may regularly or occasionally forage within the project site but breed elsewhere. The project does not appear to conflict with the Tulare County General Plan or other local policies.

The Swainson's hawk, loggerhead shrike, tricolored blackbird, and other migratory birds may nest onsite and/or on adjacent lands such that they have the potential to suffer construction related mortality, which would be considered a significant impact of the project. Avoidance of active bird nests identified during preconstruction surveys will ensure that potential impacts to these avian species are reduced to a less than significant level.

TABLE OF CONTENTS

1.0 INTRODUCTION

The technical report that follows describes the biotic resources of a 20-acre property ("project site") that will be impacted by the Visalia Concrete/Asphalt Batch Plant Project ("project"), and evaluates possible impacts to sensitive biological resources that could result from project implementation. The project site is located on the south side of Avenue 280, approximately 0.6 miles west of Highway 99 in rural Tulare County (Figure 1). The project site can be found on the *Goshen* quadrangle in Section 8 of Township 19 south, Range 24 east, Mount Diablo Base and Meridian (Figure 2).

1.1 PROJECT DESCRIPTION

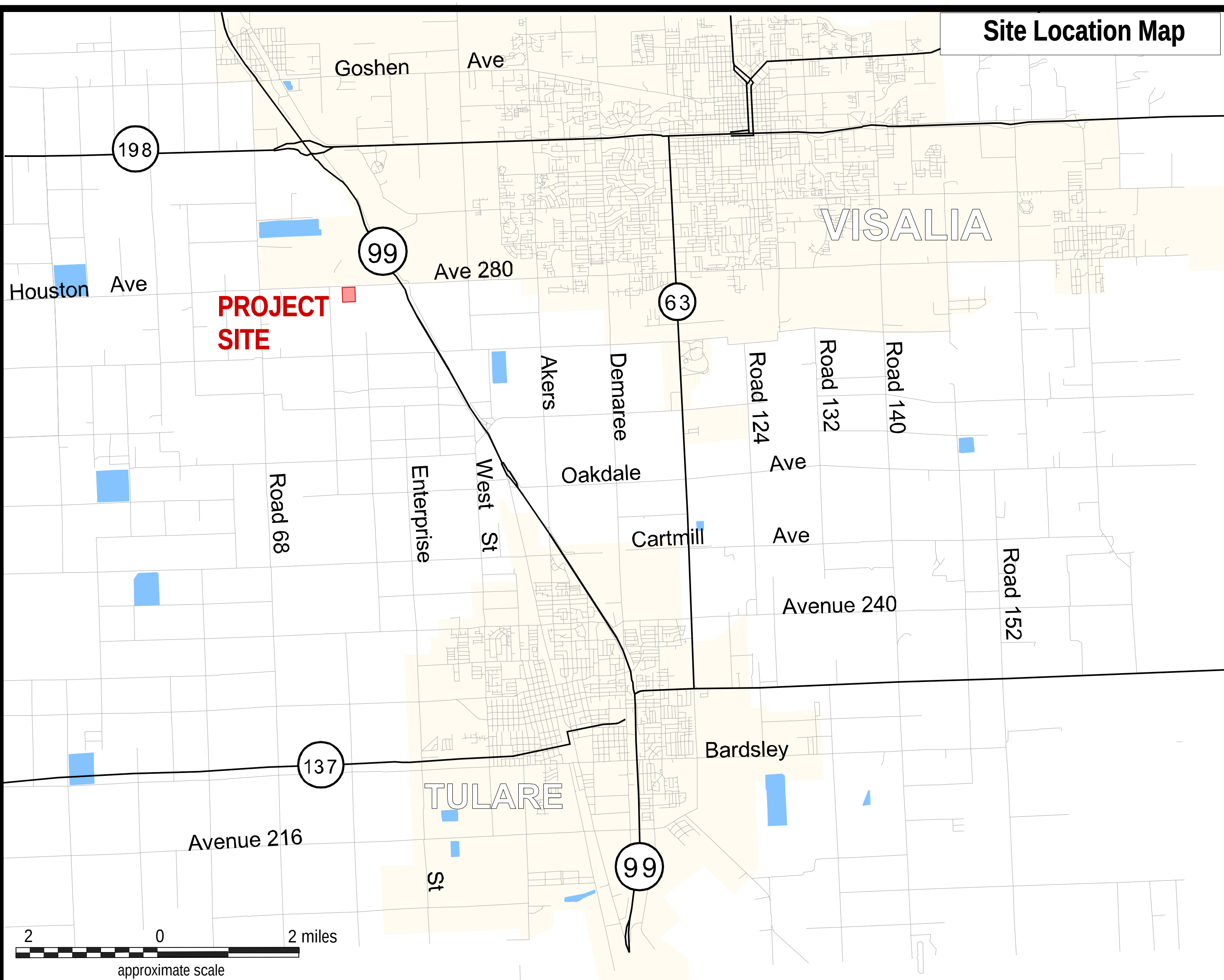
The project will consist of a concrete batch plant, concrete and asphalt recycling plant, and hot mix asphalt plant. Construction elements will include grading, installation of asphalt and gravel/decomposed granite surfacing, and the construction of several 40 foot tall silos. A conceptual site plan is presented in Appendix A.

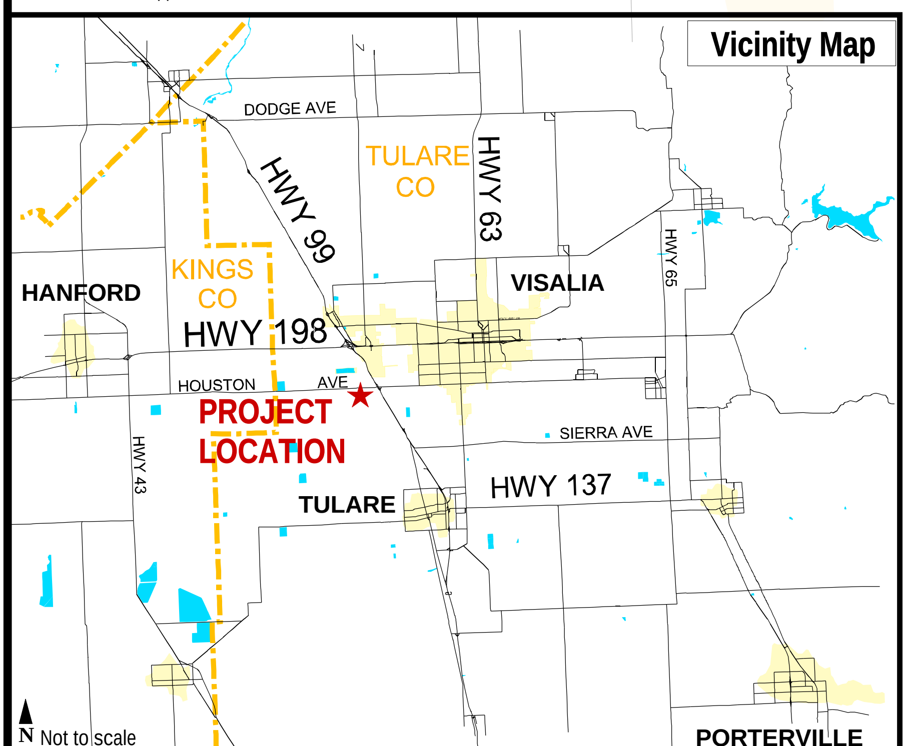
Concrete Batch Plant:

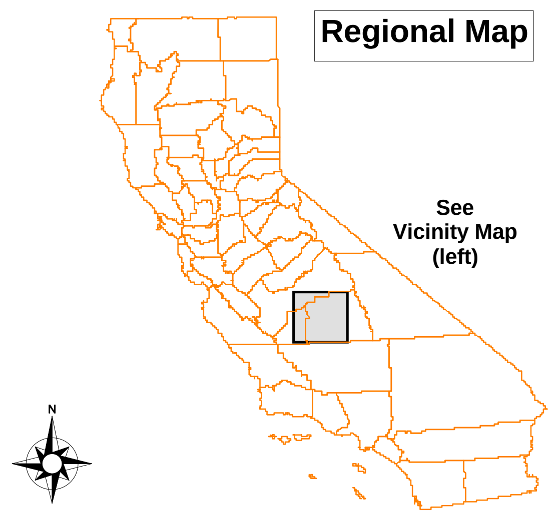
This operation will consist of a California Air Resources Board approved portable concrete mixing plant to produce ready mix concrete, with associated cement powder storage, aggregate storage (1" x # 4 Rock, 3/8 Rock and Concrete Sand), and batch operations.

Cement and fly ash will be stored in constructed silos. Aggregate will be stored in piles approximately 15' tall.

Equipment that will be used: A wheel loader will be used to maintain material piles. The crushing plant will be fed with an excavator and wheel loader. A water truck and sprinkler system will be used for dust control.



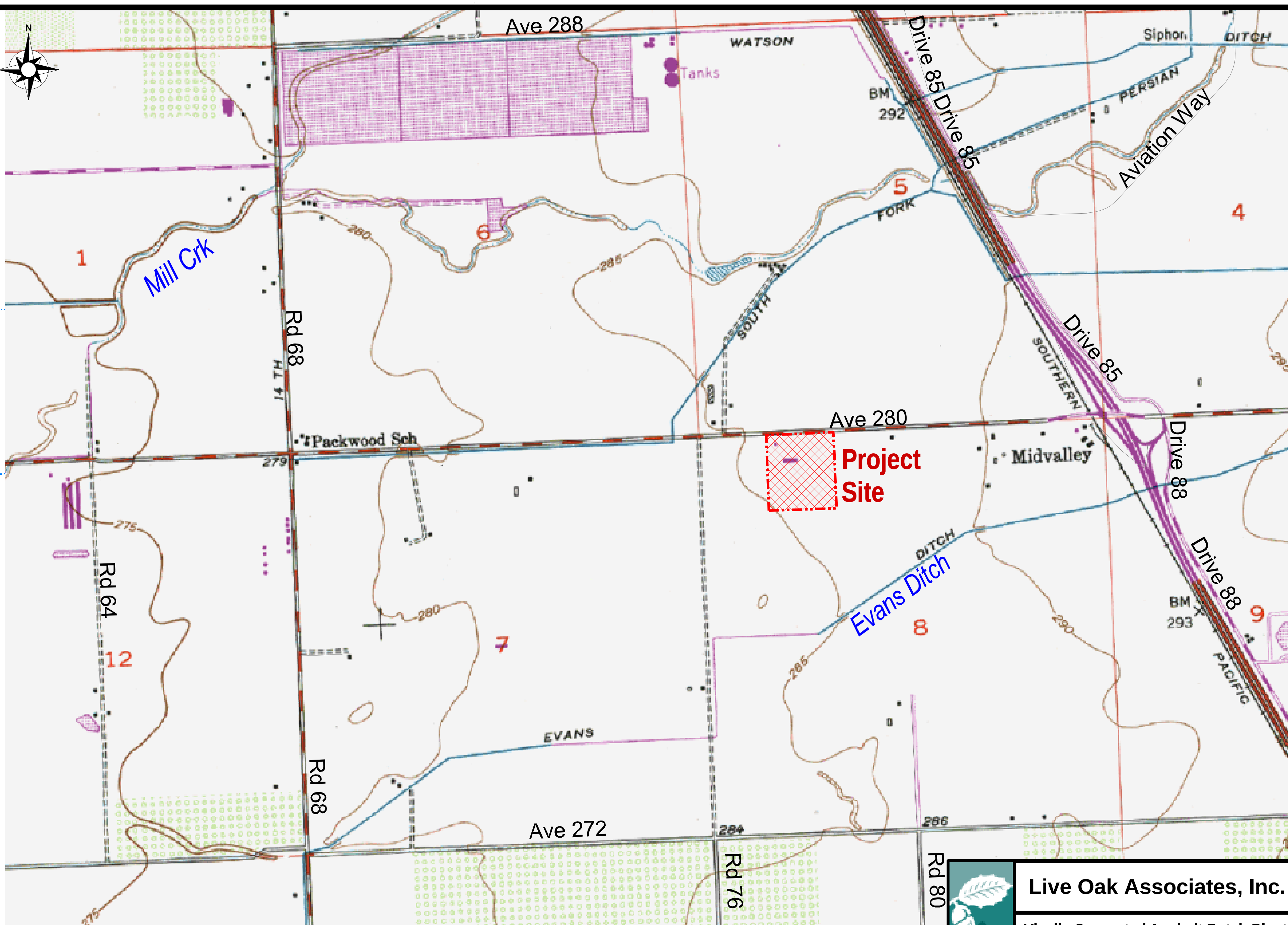




Live Oak Associates, Inc.

Visalia Concrete / Asphalt Batch Plant
Site / Vicinity Map

Date	Project #	Figure #
8/29/2018	2293-01	1



From USGS
Goshen 7.5' Quadrangle 1969

1/2 mile 0 1/2 mile
approximate scale

Live Oak Associates, Inc.		
Visalia Concrete / Asphalt Batch Plant U.S.G.S. Quadrangle		
Date 8/29/2018	Project # 2293-01	Figure # 2

Concrete and Asphalt Recycling Plant:

This is a portable plant that will only be onsite a couple times a year depending on the amount of material accumulated on site. Broken concrete and asphalt will be accepted from contractors and stored in piles approximately 15' tall. The portable crushing plant will be brought on site once there is enough accumulated material to process the material in a cost effective manner and turned into road base to be used on public roadways and parking lots.

Equipment that will be used: A wheel loader will be used to keep the material piled and to feed the aggregate into the plant. A water truck and sprinkler system will be used for dust control.

Hot Mix Asphalt Plant:

This operation will be very similar to the concrete plant except this material will be heated. Aggregates will be brought in and dumped into stockpiles that will be pushed into piles approximately 15' tall with a loader until used in the plant. Oil will be brought in and stored in containers. The plant will produce asphalt by heating up the oil with propane and mixing it with the stockpiled aggregates. The product will be put into a silo until shipped out.

1.2 REPORT OBJECTIVES

Construction of industrial infrastructure may modify biotic habitats used by sensitive plant and wildlife species. As such, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of Tulare County. This report addresses issues related to: 1) sensitive biotic resources occurring on the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources.

- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.

- Summarize all state and federal natural resource protection laws that may be relevant to site development.
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA, or any state or federal laws.
- Identify avoidance and mitigation measures that would reduce the magnitude of project impacts in a manner consistent with the requirements of CEQA and that are generally consistent with recommendations of the resource agencies regulating affected biological resources.

1.3 STUDY METHODOLOGY

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2017), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2017), and (3) manuals, reports, and references related to plants and animals of the San Joaquin Valley region. A field survey of the project site was conducted on July17, 2018 by LOA biologist Jeff Gurule. The survey consisted of walking through the project site while identifying the principal land uses and associated plant and animal species, and mapping habitat suitable for special status species and other sensitive biological resources. A driving survey of surrounding lands was also conducted in order to note land use in the vicinity of the project.

2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located in a portion of the central San Joaquin Valley that has, for decades, experienced intensive agricultural disturbances. Current agricultural endeavors in the region include orchards, row crops, pasture, and dairies. The project site is situated in rural Tulare County west of the City of Visalia and is surrounded by agricultural lands.

Like most of California, the central San Joaquin Valley has a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 to 100 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation within the project site is about 11 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain. Stormwater readily infiltrates the soils of and surrounding the project site.

The project site is within the lower Kaweah River Delta, whose distributary drainages historically drained into the Tulare Lake. These waterways were historically characterized by extensive riparian, wetland, and aquatic ecosystems that supported large populations of diverse native plants and animals. Agricultural diversions and channel realignments have eliminated much of the original riparian habitat of this river system, and aquatic and wetland habitats have been greatly degraded from agricultural runoff and controlled flows. Tulare Lake has long been drained and converted to farmland and urban uses.

Native plant and animal species once abundant in the region have become locally extirpated or have experienced large reductions in their populations due to conversion of upland, riparian, and aquatic habitats to agricultural and urban uses. Remaining native habitats are particularly valuable to native wildlife species including special status species that still persist in the region.

2.2 PROJECT SITE

The project site consists of a wheat field and a fenced area with crushed asphalt substrate containing a large metal-sided barn, an office building, and a raised water tank. The project site has experienced agriculture-related disturbance since at least 1969. The project site is flat with a mean elevation of 287 feet National Geodetic Vertical Datum (NGVD). The project site contains two soil mapping units: Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes; and Nord fine sandy loam, 0 to 2 percent slopes. Neither of these soils is considered hydric, meaning they don't have the propensity to support seasonal pools that could provide habitat for sensitive plant or animal species. Furthermore, onsite soils have been significantly disturbed by decades of agricultural practices and other human uses. As a result, the soils of the project site have no particular significance to biological resources potentially occurring on the site.

2.2 LAND USES/BIOTIC HABITATS

Two land uses/biotic habitats have been identified on the project site, comprising agricultural field and ruderal. A list of the vascular plant species observed within the project site and the terrestrial vertebrates using, or potentially using, the site is provided in Appendices B and C, respectively. Selected photographs of the project site are presented in Appendix D. Land uses/biotic habitats of the project site are displayed in Figure 3.

2.2.1 Agricultural Field

Much of the site is an agricultural field most recently planted to wheat. Analysis of historic aerial imagery suggests it is periodically also planted to corn. Aside from the remnant wheat stocks, this field was characterized at the time of the field survey by herbaceous weedy vegetation such as barnyard barley (*Hordeum murinum* ssp. *leporinum*), prostrate knotweed (*Polygonum aviculare*), asthmaweed (*Erigeron bonariensis*), prickly lettuce (*Lactuca serriola*), shepherds purse (*Capsella bursa-pastoris*), lambsquarters (*Chenopodium album*), pigweed amaranth (*Amaranthus albus*), barnyard grass (*Echinochloa crus-galli*), rescue grass (*Bromus catharticus*), and Bermuda grass (*Cynodon dactylon*).

1/2 mile 0 1/2 mile
approximate scale

Aerial Photograph Courtesy of Google Earth 2/8/2018

Live Oak Associates, Inc.

Visalia Concrete / Asphalt Batch Plant
Biotic Habitats

Date	Project #	Figure #
8/29/2018	2293-01	3

Regular cultivation of the field limits its value to native wildlife; however, some wildlife species undoubtedly utilize the field. Amphibian use of this habitat is expected to be absent due to the absence of breeding habitat on and adjacent to the site. Reptiles that could occur in the field include the common side-blotched lizard (*Uta stansburiana*), Pacific gopher snake (*Pituophis catenifer catenifer*), and common kingsnake (*Lampropeltis getula*).

Agricultural fields also provide foraging habitat for a number of avian species. Common resident species likely to forage in the agricultural field of the project site include mourning doves (*Zenaida macroura*) (observed), American crows (*Corvus brachyrhynchos*), Brewer's blackbirds (*Euphagus cyanocephalus*), brown-headed cowbirds (*Molothrus ater*), and European starlings (*Sturnus vulgaris*). Summer migrants that would be common in the agricultural field of the project site include the western kingbird (*Tyrannis verticalis*) (observed), while common winter migrants would include the savannah sparrow (*Passerella sandwichensis*) and American pipit (*Anthus rubescens*).

A few mammal species may also occur within the onsite field. Small mammals such as deer mice (*Peromyscus maniculatus*) and California voles (*Microtus californicus*) would occur in fluctuating numbers depending on the season and crop. At the time of the field survey, burrowing mammal activity was sparse, with the only evidence of mammal burrows in the form of scattered dirt mounds created by burrowing Botta's pocket gophers (*Thomomys bottae*). Various species of bat may also forage over the field for flying insects.

The presence of reptiles, birds, and small mammals is likely to attract foraging raptors and mammalian predators. Raptors such as red-tailed hawks (*Buteo jamaicensis*), Swainson's hawks (*Buteo swainsoni*), and American kestrels (*Falco sparverius*) may forage over the field. Mammalian predators occurring in the agricultural field of the project site would most likely be limited to raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), coyotes (*Canis latrans*), and red fox (*Vulpes vulpes*), as these species are relatively tolerant of human disturbance.

2.2.2 Ruderal/Developed

The project site contained a ruderal/developed area surrounded by a chain-link fence. This portion of the site has been heavily influenced by human activities and contained a ground cover that appeared to be crushed asphalt, a large metal-sided barn, office building, stockpiles of broken concrete, and raised water tank. This ruderal/developed area contained little to no vegetation. Where vegetation was present, it consisted of weedy forbs such as Jimsonweed (*Datura wrightii*) and pigweed amaranth. A single medium sized mulberry tree (*Morus alba*) was located in this area next to the office building.

The wildlife habitat value of this portion of the project site is very low and is expected to be utilized primarily by non-native animal species accustomed to human environments. Amphibians are expected to be absent due to the lack of water and vegetation. Common reptiles such as the western fence lizard (*Sceloporus occidentalis*) and Pacific gopher snake could potentially use ruderal habitats of the project area. Rock pigeons (*Columba livia*) (observed), mourning doves, European starlings (*Sturnus vulgaris*), northern mockingbirds (*Mimus polyglottos*), house finches (*Carpodacus mexicanus*), and house sparrows (*Passer domesticus*) (observed) could be expected to occur in this ruderal/developed area, as could the disturbance-tolerant killdeer (*Charadrius vociferus*), which often nests on gravel or bare ground.

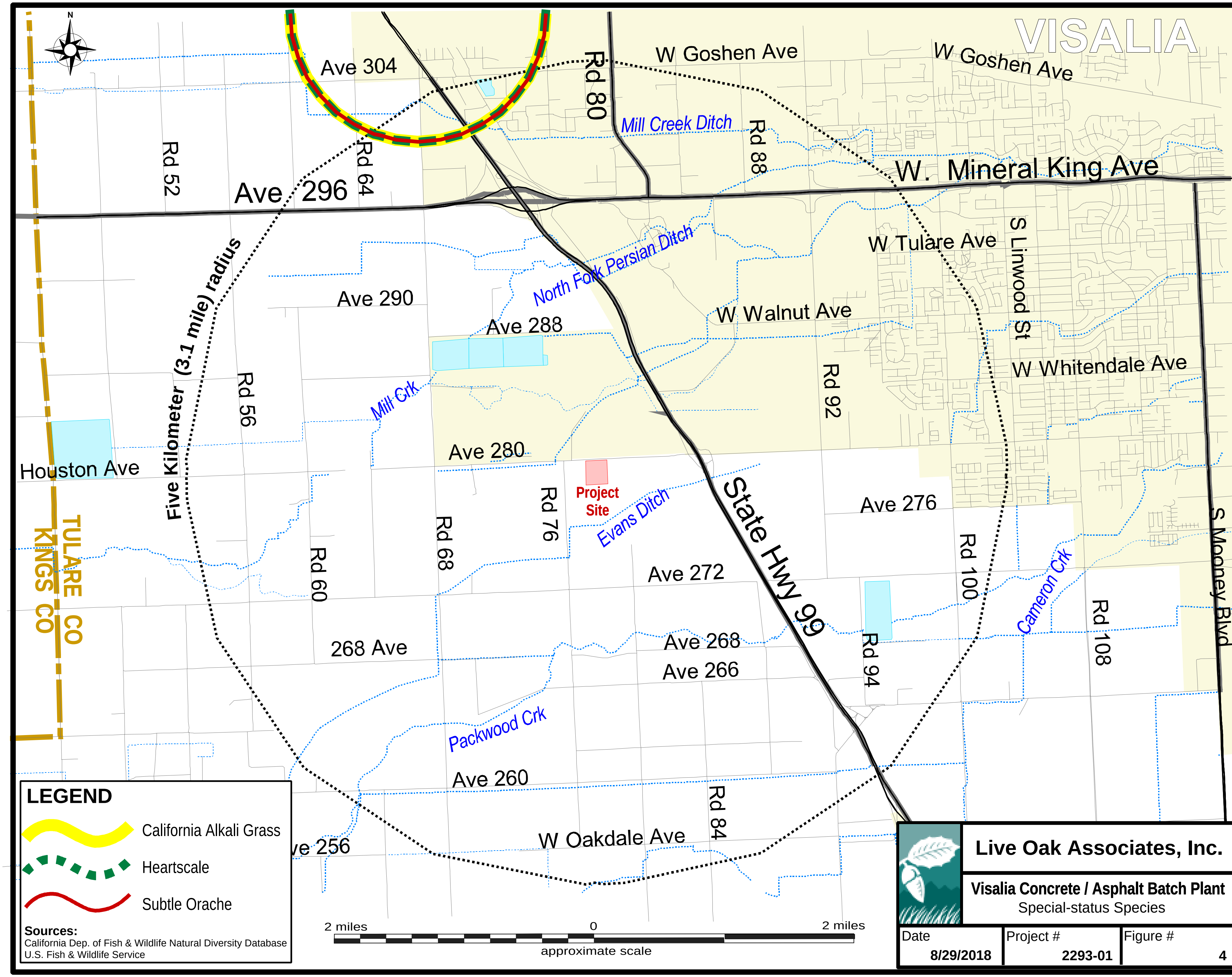
Small mammals are expected to be limited to house mice (*Mus musculus*), deer mice, and brown rat (*Rattus norvegicus*). Larger mammals are expected absent from this area due to the surrounding fence and low habitat value.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2018). Collectively, these plants and animals are referred to as "special status species."

The California Natural Diversity Data Base (CDFW 2018) was queried for special status species occurrences in the nine USGS 7.5 minute quadrangles containing and immediately surrounding the project site (*Goshen, Visalia, Tulare, Paige, Waukena, Remnoy, Burris Park, Traver,* and *Monson*). These species, and their potential to occur on the project site, are listed in Table 1 on the following pages. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990), *California Natural Diversity Data Base* (CDFW 2018), *Endangered and Threatened Wildlife and Plants* (USFWS 2018), *The Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998), *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al 2012), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2018), Calflora.org, and eBird.org.

Special status species occurrences within 5 kilometers of the project site are depicted in Figure 4 and San Joaquin kit fox (*Vulpes macrotis mutica*) occurrences and Swainson's hawk (*Buteo swainsoni*) nesting locations within 10 miles are presented in Figure 5.


VISALIA
W Goshen Ave
W Goshen Ave
Ave 304
Rd 80
Mill Creek Ditch
Rd 88
W. Mineral King Ave
Rd 52
Ave 296
Rd 64
Five Kilometer (3.1 mile) radius
North Fork Persian Ditch
W Tulare Ave
S Linwood St
Ave 290
Ave 288
W Walnut Ave
Rd 56
Mill Crk
Rd 92
W Whitendale Ave
Houston Ave
Ave 280
Project Site
Rd 76
Evans Ditch
State Hwy 99
Ave 276
Rd 68
Rd 60
TULARE CO
KINGS CO
Rd 100
Cameron Crk
S Mooney Blvd
Ave 272
268 Ave
Ave 268
Ave 266
Rd 94
Rd 108
Packwood Crk
Ave 260
Ave 256
W Oakdale Ave
Rd 84
LEGEND
California Alkali Grass
Heartscale
Subtle Orache
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Visalia Concrete / Asphalt Batch Plant
Special-status Species
Date 8/29/2018
Project # 2293-01
Figure # 4

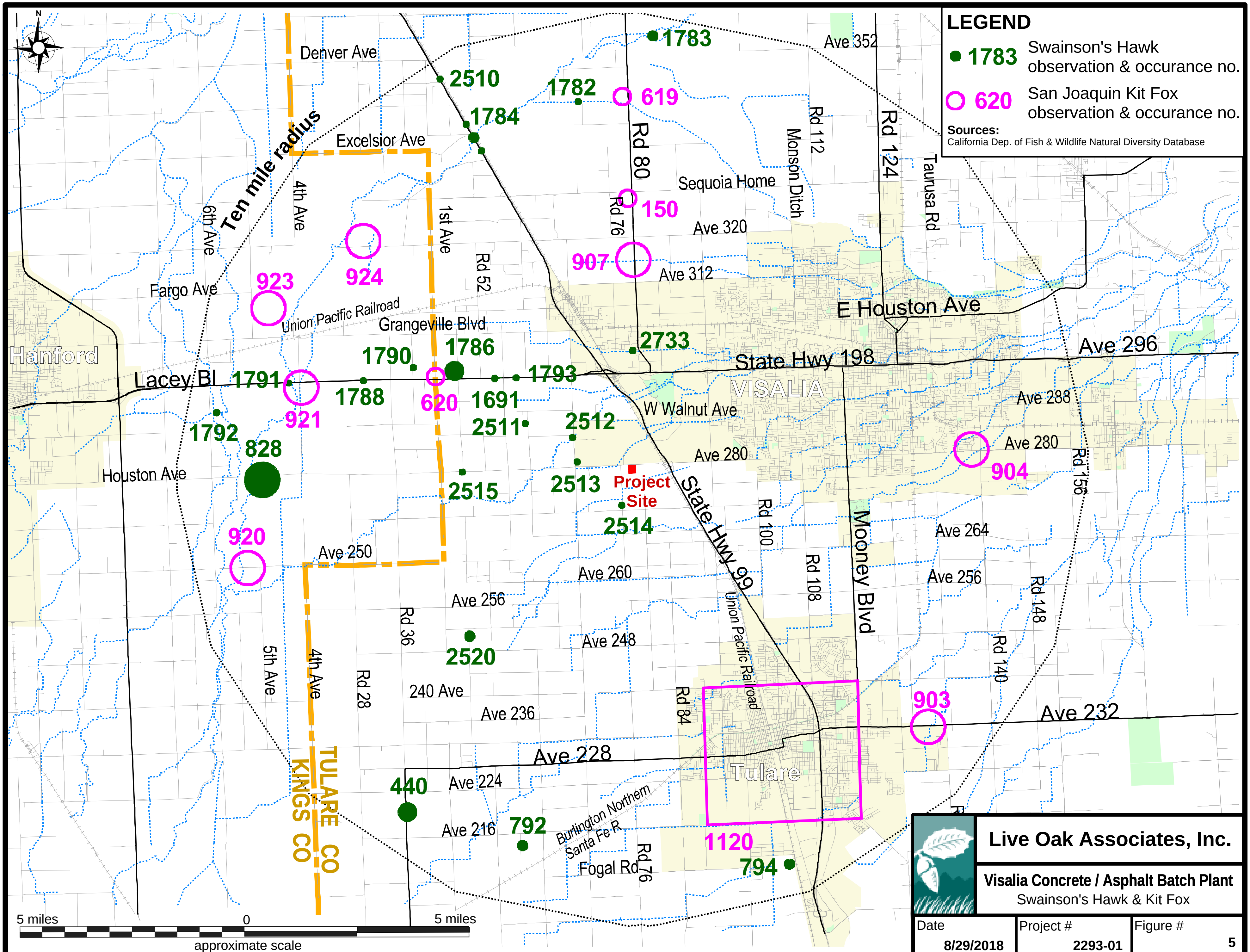

LEGEND
1783 Swainson's Hawk observation & occurance no.
620 San Joaquin Kit Fox observation & occurance no.
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Live Oak Associates, Inc.
Visalia Concrete / Asphalt Batch Plant
Swainson's Hawk & Kit Fox
Date
8/29/2018
Project #
2293-01
Figure #
5
5 miles
0
5 miles
approximate scale
N
Ten mile radius
Project Site
Hanford
VISALIA
Tulare
TULARE CO
KINGS CO
Denver Ave
Excelsior Ave
Fargo Ave
Union Pacific Railroad
Grangeville Blvd
Lacey Bl
Houston Ave
Ave 250
Ave 256
Ave 260
Ave 248
240 Ave
Ave 236
Ave 228
Ave 224
Ave 216
Fogal Rd
Burlington Northern Santa Fe R
6th Ave
4th Ave
1st Ave
5th Ave
Rd 52
Rd 36
Rd 28
Rd 80
Rd 76
Rd 84
Rd 100
Rd 108
Rd 112
Rd 124
Rd 140
Rd 148
Rd 156
Monson Ditch
Taurusa Rd
Sequoia Home
Ave 352
Ave 320
Ave 312
E Houston Ave
State Hwy 198
Ave 296
Ave 288
Ave 280
Ave 264
Ave 256
Ave 232
W Walnut Ave
State Hwy 99
Mooney Blvd
1783
2510
1782
619
1784
150
907
924
923
2733
1790
1786
1793
1791
921
1788
620
1691
2511
2512
1792
828
2513
2515
2514
920
2520
903
904
440
792
1120
794

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2018 and CNPS 2018)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence on the Project Site
California Jewel-flower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Occurs in chenopod scrub, pinyon and juniper woodland, and sandy valley and foothill grassland; blooms February–May; elevation 250-3,300 ft.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.
Hoover's Spurge (*Euphorbia hooveri*)	FT CNPS 1B	Occurs in vernal pools of California's Central Valley; blooms July-September; elevation 80-820 ft.	**Absent.** Suitable habitat in the form of vernal pools does not exist on the project site.
San Joaquin Valley Orcutt Grass (*Orcuttia inaequalis*)	FT, CE CNPS 1B	Occurs in vernal pools of the Central Valley; requires deep pools with prolonged periods of inundation; blooms April-September; elevation 100-2,480 ft.	**Absent.** Suitable habitat in the form of vernal pools does not exist on the project site.
San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*)	FT, CE CNPS 1B	Occurs in grasslands of the Sierra Nevada foothills in heavy clay soils of the Porterville and Centerville series. Blooms March-April; elevation 300-2,625 ft.	**Absent.** Porterville and Centerville soils are absent from the project site, and on-site habitats are otherwise unsuitable for this species.

CNPS-Listed Plants

Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS 1B	Occurs on saline or alkaline soils in chenopod scrub, meadows, seeps, and grasslands; blooms April-October; elevations below 1,230 ft.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.
Earlimart Orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Occurs in valley and foothill grasslands between 130 and 330 ft. in elevation; blooms August-September.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.
Brittlescale (*Atriplex depressa*)	CNPS 1B	Occurs in chenopod scrub, valley and foothill grassland, and wetland habitats; blooms April-October; elevations below 1,050 ft.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.
Lesser Saltscale (*Atriplex minuscula*)	CNPS 1B	Occurs in cismontane woodland and valley and foothill grasslands of the San Joaquin Valley; alkaline/sandy soils; blooms May-October; elevation 50-660 ft.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.
Subtle Orache (*Atriplex subtilis*)	CNPS 1B	Occurs in valley and foothill grasslands of the San Joaquin Valley; blooms August-October; elevation 130-330 ft.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.
Recurved Larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in cismontane woodland and valley and foothill grasslands; blooms March-June; alkaline soils; elevations below 2,500 ft.	**Absent.** Suitable habitat for this species is absent from the project site. Any suitable habitat that may have once been present has been modified by intensive human use.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (cont'd)

CNPS-Listed Plants

Species	Status	Habitat	Occurrence on the Project Site
Spiny-Sepaled Button Celery (*Eryngium spinosepalum)*	CNPS 1B	Occurs in vernal pools and valley and foothill grasslands of the San Joaquin Valley and the Tulare Basin; blooms April-May; elevation 330-840 ft.	**Absent.** Suitable habitat in the form of vernal pool wetlands or wetland swales are absent from the project site.
California Satintail (*Imperata brevifolia*)	CNPS 2B	This perennial grass is found in scrubland and chaparral habitats where water is available. Blooms September-May.	**Absent.** Suitable habitat for this species is absent from the project site.
California Alkali-Grass (*Puccinellia simplex*)	CNPS 1B	Occurs in saline flats and mineral springs less than 900 m. in elevation in the Central Valley, San Francisco Bay area and western Mojave Desert.	**Absent.** Suitable habitat in the form of saline flats and mineral springs is absent from the project site.
Sanford's Arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Occurs in freshwater emergent marsh habitat in drainage ditches and canals of California's Central Valley. Blooms May to October.	**Absent**. Suitable habitat for this species is not present on the project site.

ANIMALS (adapted from CDFW 2018 and USFWS 2018)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act, and/or as California Fully Protected

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT	Occurs in vernal pools, clear to tea-colored water in grass or mud-bottomed swales, and basalt depression pools.	**Absent.** Suitable habitat in the form of vernal pools is absent from the project site.
Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)	FE	Primarily found in vernal pools, but may use other seasonal wetlands in mesic valley and foothill grasslands.	**Absent.** Suitable habitat in the form of vernal pools is absent from the project site.
California Tiger Salamander (*Ambystoma californiense*)	FT, CT	Found primarily in annual grasslands; requires vernal pools for breeding and rodent burrows for aestivation. Although most CTS aestivate within 0.4 mile of their breeding pond, outliers may aestivate up to 1.3 miles away (Orloff 2011).	**Absent.** Vernal pool or seasonal wetland habitat suitable for breeding by the CTS does not exist on or within a 1.3-mile radius of the project site. The site is situated within agricultural lands generally not suitable for CTS. Furthermore, the site is located outside the known range of the species, with the closest known breeding occurrence of CTS approximately 16 miles northeast of the project site.
Blunt-Nosed Leopard Lizard (*Gambelia sila*)	FE, CE, CFP	Occurs in semiarid grasslands, alkali flats, and washes. Avoids densely vegetated areas. Inhabits the San Joaquin Valley and adjacent valleys and foothills north to Merced County.	**Absent.** Suitable habitat for this species is absent from the project site and surrounding lands.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act, and/or as California Fully Protected

Species	Status	Habitat	Occurrence on the Project Site
Swainson's Hawk (*Buteo swainsoni*)	CT	This breeding-season migrant to California nests in stands with few trees in riparian areas and juniper-sage flats, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Possible.** The wheat and corn crops grown on the onsite agricultural field provide unsuitable (corn) to seasonably suitable (wheat) foraging habitat for Swainson's hawks (Estep 2009). A single medium sized onsite mulberry tree offers extremely marginal nesting habitat. Twenty-two Swainson's hawk nesting occurrences have been documented within 10-mile radius of the project site (CDFW 2018).
Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Occurs in valley foothill and desert riparian habitats in scattered locations in California Requires extensive gallery riparian forests for nesting.	**Absent.** Suitable habitat for this species is absent from the project site. The only known occurrence in the project vicinity was mapped generally to Visalia in 1919 (CDFW 2018).
Tricolored Blackbird (*Agelaius tricolor*)	CC	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in grassland and cropland habitats.	**Possible.** Tricolored blackbirds could occasionally forage in the agricultural field of the project site. This species could conceivable nest in the agricultural field when wheat is grown. The closest known occurrence of a breeding colony was documented in a wheat field approximately 10 miles southwest of the project site in 2000 (CDFW 2018).
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE, CT	Found in desert alkali scrub and annual grasslands; may forage in adjacent agricultural habitats. Use underground dens for thermoregulation, cover, and reproduction. Dens are either self-dug or modified rodent burrows.	**Unlikely.** Habitats on the project site are of little to no value to kit fox due to regular human disturbance, the lack of available prey, and the site's isolation from natural habitats and known kit fox populations. There are 11 documented kit fox occurrences within a 10-mile radius of the project site, with all but two from the early to mid-1970s (see Figure 5). In fact, there have been no documented kit fox occurrences in the project vicinity for the last 15 years. The project site is situated approximately 60 miles away from the nearest kit fox core population on natural lands of western Kern County (Smith et al. 2006).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (cont'd)

California Species of Special Concern

Species	Status	Habitat	Occurrence in the Project Site
Western Spadefoot (*Spea hammondii*)	CSC	Mainly occurs in grasslands of San Joaquin Valley. Vernal pools or other temporary wetlands are required for breeding. Aestivates in underground refugia such as rodent burrows, typically within 1,200 ft. of aquatic habitat.	**Absent.** Suitable breeding habitat for western spadefoot does not exist on the project site or surrounding lands.
Western Pond Turtle (*Emys marmorata*)	CSC	Occurs in open slow-moving water or ponds with rocks and logs for basking. Typically requires perennial waters. Nesting occurs in open areas, on a variety of soil types, and up to ¼ mile away from water. This species is almost extinct in the southern San Joaquin Valley.	**Absent.** Suitable aquatic habitat for western pond turtle does not exist on the project site or surrounding lands.
Northern California Legless Lizard (*Anniella pulchra*)	CSC	Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Absent.** The project site provides unsuitable habitat for this species due to ongoing agricultural use of the site.
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Absent**. Burrowing owls are considered absent from the project site for the following reasons. Documented burrowing owl occurrences are absent from the project vicinity (CDFW 2018; ebird 2018); no sign of burrowing owl occupation was observed on the project site; when crops are standing the site is rendered unsuitable for burrowing owls; and suitably sized burrows were absent from the project site.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	**Possible.** Shrikes could nest in the single onsite tree and could forage in the agricultural field on the site.
Western Mastiff Bat (*Eumops perotis californicus*)	CSC	Found in open, arid to semi-arid habitats. Roosts most commonly in crevices in cliff faces, but may also use high buildings, trees, and tunnels.	**Possible.** Potential foraging habitat occurs in the airspace above the site. Roosting habitat is absent from the site. Furthermore, this species is not known to roost in the southern San Joaquin Valley.
American Badger (*Taxidea taxus*)	CSC	Uncommon resident statewide; most abundant in drier open stages of most shrub, forest, and herbaceous habitats.	**Absent.** The project site provides unsuitable habitat for this species due to ongoing agricultural use of the site.

OCCURRENCE TERMINOLOGY

Present:	Species observed on the site at time of field surveys or during recent past.
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible:	Species not observed on the site, but it could occur there from time to time.
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent:	Species not observed on the site, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CFP	California Fully Protected
FPT	Federally Threatened (Proposed)	CSC	California Species of Special Concern
FC	Federal Candidate	CC	California Candidate
CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
1B	Plants Rare, Threatened, or Endangered in California and elsewhere		

2.4 ENDANGERED, THREATENED, OR SPECIAL STATUS PLANT AND ANIMAL SPECIES MERITING FURTHER DISCUSSION

2.4.1 Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened.

Ecology of the species. The Swainson's hawk is a large, long-winged, broad-tailed hawk with a high degree of mate and territorial fidelity. It is a breeding season migrant to California, with hawks arriving at their nesting sites in March or April. The young typically hatch between May and June and fledge 4 to 6 weeks later. By October, most birds have left for wintering grounds in South America.

In the Central Valley, Swainson's hawks typically nest in large trees along riparian systems, but may also nest in oak groves or lone, mature trees in agricultural fields or along roadsides. Nest sites are typically located adjacent to suitable open habitat for hunting small prey. In the Central Valley, California voles account for about 45% of non-insect prey taken by the Swainson's hawk, followed by mourning doves, ring-necked pheasants (*Phasianus colchicus*), western meadowlarks (*Sturnella neglecta*), and other birds (32%), and pocket gophers, deer mice, and other small mammals (20%) (Estep 1989). Insects comprise a large proportion of individual prey items, but a negligible proportion of total prey biomass, during the breeding season.

The suitability of a particular site for Swainson's hawk foraging is based on a combination of prey abundance and prey accessibility; the latter is determined by the vegetation characteristics of a site (Bechard 1982, Estep 1989). Swainson's hawks preferentially forage in habitats with low-profile vegetation, such as grasslands or pastures, fallow or disced fields, alfalfa and other hay crops, and certain grain and row crops, primarily during or immediately after harvest (Estep 1989, Estep and Dinsdale 2012). Loss of nesting and foraging habitat has greatly reduced the breeding range and abundance of this species in California, leading to its listing as threatened under the California Endangered Species Act in 1983 (CDFG 1994).

Potential to occur onsite. The project site contains 17 acres of agricultural field that has been planted to wheat and/or corn, depending on the year, for the last 10 years. Aerial photos of the project vicinity over the last 10 years indicate that surrounding lands follow the same crop regime. At the time of the July 2018 field survey, the onsite ag field consisted of wheat stocks that were harvested earlier in the summer. Surrounding lands consisted of corn. It is surmised that corn was not planted on the project site in 2018 in anticipation of the proposed land-use change. In years of corn production on the site, the site would provide unsuitable Swainson's hawk foraging habitat due to low prey abundance and inaccessibility of prey items during the period of time when Swainson's hawks are present in the region. In years of both wheat and corn production, the site would provide low suitability foraging habitat, with a small window of foraging opportunity post-wheat harvest and pre-corn planting. During years of wheat production, the site would offer seasonably suitable foraging habitat post-harvest (Estep 2009). The ruderal/developed area of the site is considered unsuitable for foraging due to the crushed asphalt substrate, stockpiles of broken concrete, and onsite buildings; which provide unsuitable habitat for potential prey items. This ruderal/developed area contains a single medium-sized white mulberry tree that provides extremely marginal nesting habitat. Foliage was sparse and no stick nests were observed during the field investigation. Nesting habitat is absent from immediately surrounding lands. However, Swainson's hawk nesting activity is abundant in the project vicinity, with the nearest nesting occurrence 0.7 miles southwest of the project site (see Figure 5). Furthermore, a driving inspection of lands in the near vicinity of the project site by the investigator found Swainson's hawks present in the project vicinity, primarily near alfalfa fields.

It is expected that Swainson's hawks occasionally utilize 17 acres of the site for foraging for a few months of some years depending on crop selection.

2.5 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the CDFW, and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.5 of this report for additional information.

The project site and immediately surrounding lands contain no hydrologic features. As a result, jurisdictional waters are absent from the project site.

2.6 NATURAL COMMUNITIES OF SPECIAL CONCERN

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, home to special status plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of natural communities of special concern in the eastern San Joaquin Valley in the vicinity of the project would include vernal pools and various types of riparian forest (Sawyer, Keeler-Wolf and Evens 2012).

Natural communities of special concern are absent from the project site and immediately surrounding lands.

2.7 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

Wildlife movement corridors are absent from the project site and immediately surrounding lands.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

Approval of general plans, area plans, and specific projects is subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are carried out. CEQA is concerned with the significance of a proposed project's impacts. For example, a proposed development project may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make "mandatory findings of significance" if the project has the potential to:

> "Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory."

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 General Plan Policies of County of Tulare

In compliance with CEQA, the lead agency considers conformance with applicable goals and policies of the General Plans of the County of Tulare. The Tulare County General Plan released an update in 2003 that is valid through 2030. Implementation of goals in the Tulare County General Plan is accomplished via a set of policies specific to each goal.

Relevant biological resource goals of the Tulare County General Plan include:

- protecting rare and endangered species;

- limiting development in environmentally sensitive areas;

- encouraging cluster development in areas with moderate to high potential for sensitive habitat;

- protecting riparian areas though habitat preservation, designation as open space or recreational land uses, bank stabilization and development controls;

- requiring mining reclamation plans and other management plans to include measures to protect, maintain and restore riparian resources and habitats;
- supporting the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats;
- encouraging the planting of native trees, shrubs, and grasslands preserve;
- requiring open space buffers between development projects and significant watercourse, riparian vegetation, wetlands, and other sensitive habitats and natural communities;
- coordinating with other government land management agencies to preserve and protect biological resources;
- encouraging appropriate access to resource-managed lands;
- providing opportunities for hunting and fishing activities;
- supporting the conservation and management of oak woodland communities and their habitats;
- implementing pesticide controls to limit effects on natural resources; and
- supporting the establishment and administration of a mitigation banking program.

No habitat conservation plans (HCPs) occur in this part of Tulare County.

3.2.2 Threatened and Endangered Species

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as “threatened” or “endangered” under one or both Acts, and/or as “rare” under CESA. Under both Acts, “endangered” means a species is in danger of extinction throughout all or a significant portion of its range, and “threatened” means a species is likely to become endangered within the foreseeable future. Under CESA, “rare” means a species may become endangered if their present environment worsens. Both Acts prohibit “take” of listed species, defined under CESA as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86), and more broadly defined under FESA to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3).

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the "take" of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.2.3 Migratory Birds

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Although the USFWS and its parent administration, the U.S. Department of the Interior, have traditionally interpreted the FMBTA as prohibiting incidental as well as intentional "take" of birds, a January 2018 legal opinion issued by the Department of the Interior now states that incidental take of migratory birds while engaging in otherwise lawful activities is permissible under the FMBTA. However, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

3.2.4 Birds of Prey

Birds of prey are also protected in California under provisions of the California Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.2.5 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water.

The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. In addition to issuing Section 401 Water Quality Certifications and WDRs, the RWQCB administers locally the federal National Pollution Discharge Elimination System (NPDES) program. Discharges of wastewater, storm water, or other pollutants into a Water of the U.S. may require a NPDES permit issued by the RWQCB.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

3.3 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION

As discussed, the project is the conversion of 20 acres containing an agricultural field and ruderal/developed area to industrial use in the form of a small concrete/asphalt batch plant.

3.3.1 Project Impacts to Nesting Swainson's Hawks, Tricolored Blackbird, Loggerhead Shrike, and Other Migratory Birds

Potential Impacts. The project site contains suitable nesting habitat for a few avian species protected by state laws. The onsite tree could also be used by a few bird species including the loggerhead shrike (*Lanius ludovicianus*), a California Species of Special Concern. The tricolored blackbird (*Agelaius tricolor*), a State Endangered Candidate species, could potentially nest in the agricultural field if wheat is grown as it was prior to the field investigation of the site. The Swainson's hawk could nest in a few native oak trees approximately 0.42 to 0.5 miles north of the project site. The onsite mulberry tree and non-native residential trees approximately 0.15 miles east along Avenue 280 are considered extremely unlikely to support nesting Swainson's hawks. Even the most disturbed habitats of the project site could be used by the killdeer, mourning dove, and other disturbance-tolerant birds. If birds were to be nesting on or adjacent to the project site at the time of construction, project-related activities could result in the abandonment of active nests or direct mortality to these birds. Construction activities that adversely affect the nesting success of raptors or result in mortality of individual birds constitute a violation of state laws (see Sections 3.2.3 and 3.2.4) and would be considered a significant impact under CEQA.

Given the many square miles of agricultural land in the project vicinity that provides similar to higher quality avian nesting habitat, a loss of a small amount of potential nesting habitat for the loggerhead shrike and tricolored blackbird is considered less than significant under CEQA.

Mitigation. In order to minimize construction disturbance to nesting birds, the applicant will implement the following measure(s), as necessary, prior to project construction:

> ***Mitigation 3.3.1a*** **(*Avoidance*).** In order to avoid impacts to nesting birds, construction will occur, where possible, outside the nesting season, or between September 16 and January 31.
>
> ***Mitigation 3.3.1b*** **(*Pre-construction Surveys*).** If construction must occur during the nesting season (February 1-September 15), a qualified biologist will conduct pre-construction surveys for active bird nests within 10 days of the onset of project initiation. Nest surveys will include all accessible areas on the project site and within 250 feet of the project site for tricolored blackbird, loggerhead shrike, and other migratory birds; within 500 feet for non-listed raptors; and 0.5 miles for Swainson's hawks. Inaccessible areas

will be scanned with binoculars or spotting scope, as appropriate. If no active nests are found within the survey area, no further mitigation is required.

Mitigation 3.3.1c **(*Establish Buffers*).** If active nests are found within the survey areas a qualified biologist will establish appropriate no-disturbance buffers based on species tolerance of human disturbance, baseline levels of disturbance, and barriers that may separate the nest from construction disturbance. These buffers will remain in place until the breeding season has ended or until the qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

Compliance with the above mitigation measures would reduce impacts to nesting raptors and migratory birds, including the Swainson's hawk, tricolored blackbird, and loggerhead shrike, to a less than significant level under CEQA, and ensure compliance with state laws.

3.4 LESS THAN SIGNIFICANT PROJECT IMPACTS

3.4.1 Loss of Habitat for Special Status Plants

Potential Impacts. Fourteen special status vascular plant species are known to occur in the region: California jewelflower, Hoover's spurge, San Joaquin Valley orcutt grass, San Joaquin adobe sunburst, heartscale, Earlimart orache, brittlescale, lesser saltscale, subtle orache, recurved larkspur, spiny-sepaled button celery, California satintail, Sanford's arrowhead, and California alkali-grass (see Table 1). Due to the absence of suitable habitat on the project site, none of these species are expected to occur on site. Therefore, the proposed project would not affect regional populations of these species and impacts would be less than significant.

Mitigation. Mitigation measures are not warranted.

3.4.2 Project Impacts to Special Status Animal Species Absent from, or Unlikely to Occur on the Project Site

Potential Impacts. Of the 15 special status animal species that potentially occur in the project vicinity, 11 are considered absent or unlikely to occur within the project site due to past and ongoing disturbance of the site and surrounding lands, the absence of suitable habitat, and/or the site being situated outside of the species' known distribution. These species include the vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, western spadefoot, western pond turtle, Northern California legless lizard, blunt-nosed leopard lizard, western yellow-billed cuckoo, burrowing owl, San Joaquin kit fox, and American badger (see Table 1).

The project does not have the potential to significantly impact these species through construction mortality or loss of habitat because there is little or no likelihood that they are present.

Mitigation. Project impacts to special status animals considered absent or unlikely to occur on the site are less than significant under CEQA. Mitigation is not warranted.

3.4.3 Project Impacts to Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere

Potential Impacts. One special status animal, the western mastiff bat, has the potential to forage on the site from time to time but would not breed on-site (see Table 1). Potential foraging habitat on the project site is not uniquely important for this species and similar or higher quality foraging habitat is abundant in the region. Therefore, the loss of foraging habitat for the western mastiff bat is not a significant impact of the project under CEQA.

Mitigation. Mitigation is not warranted.

3.4.4 Project Impacts to Swainson's Hawk Due to Habitat Loss

Potential Impacts. As discussed in Section 2.4.1 the project site's agricultural field represents 17 acres of unsuitable to seasonally suitable foraging habitat for Swainson's hawks, depending on yearly crop choices. Swainson's hawk nesting activity is abundant in the project vicinity. Given the high density of nesting Swainson's hawks in the region it is reasonable to assume that Swainson's hawks occasionally forage, some years, on the agricultural field of the site.

The project would permanently decrease the amount of currently available foraging habitat in the region by 17 acres. However, given the many square miles of corn, wheat, and alfalfa fields in the region that offer similar to higher quality foraging habitat, a loss of 17 acres of wheat or corn field would not significantly reduce Swainson's hawk foraging habitat, would not imperil individual Swainson's hawks, and would have a less than significant impact under CEQA on regional populations of this species.

Nesting habitat is extremely marginal on the project site in the form of a single mulberry tree and is absent from immediately surrounding lands. Therefore, the project would have a less than significant effect on Swainson's hawks from loss of nesting habitat.

Mitigation. Mitigation is not warranted.

3.4.5 Project Impacts to Fish and Wildlife Movements, Movement Corridors, and Use of Nursery Sites.

Potential Impacts. While some common wildlife species, primarily birds, are expected to regularly use and/or pass through the site, the project site does not contain any features that would function as a fish or wildlife movement corridor or be considered a nursery site. Therefore, the project will not substantially impede the movement of native fish or wildlife species, nor impede their use of a nursery site. Project impacts to wildlife movements, movement corridors, and nursery sites are considered less than significant under CEQA.

Mitigation. Mitigation measures are not warranted.

3.4.6 Project Impacts to Potential Waters of the United States

Potential Impacts. The project site contains no hydrologic features. As such, Waters of the U.S. are absent from the project site. The project will have no impact on Waters of the U.S.

Mitigation. Mitigations are not warranted.

3.4.7 Degradation of Water Quality in Seasonal Drainages, Stock Ponds, and Downstream Waters

Potential Impacts. Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc.

The project site is situated within a flat landscape and no waterways are present within or immediately adjacent to the project site. Therefore, downstream water quality would not be impacted by project activities.

Mitigation. Mitigations are not warranted.

3.4.8 Project Impacts to Riparian Habitat other Sensitive Habitats

Potential Impacts. No riparian or other sensitive habitats occur on or immediately adjacent to the project site. Because these habitats are absent, they will not be impacted by project activities.

Mitigation. Mitigation measures are not warranted.

3.4.9 Local Policies or Habitat Conservation Plans

Potential Impacts. The proposed project appears to be consistent with the goals and policies of the Tulare County General Plan. No known Habitat Conservation Plans or Natural Community Conservation Plans are in effect for the area. Therefore, the project would be carried out in compliance with local policies and ordinances.

Mitigation. No mitigation is warranted.

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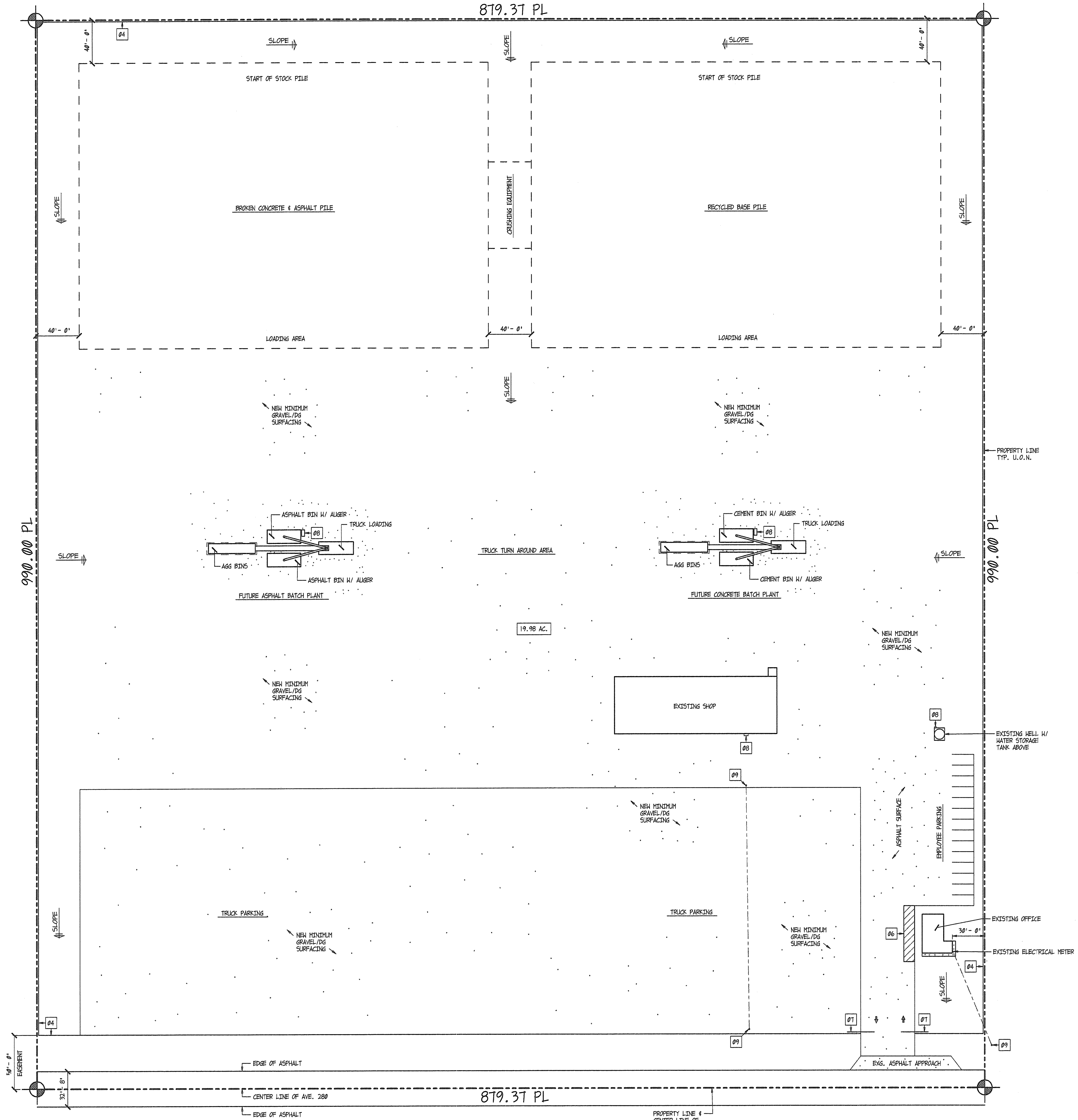
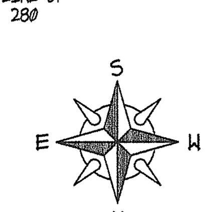
Zeiner, David C., William F. Laudenslayer, Kenneth E. Mayer and Marshal White. Ed. 1988. California's wildlife, volume I, amphibians and reptiles, volume II, birds, and volume III, mammals. Department of Fish and Game. Sacramento, CA. (Online: http://www.dfg.ca.gov/biogeodata/cwhr/cawildlife.aspx).

APPENDIX A: CONCEPTUAL SITE PLAN



7763 AVE. 280

NOTE: STREET ADDRESS SHALL BE POSTED AT JOB SITE WITH 6 INCH HIGH NUMERALS



PLOT PLAN

1" = 50'-0"

REFERENCE NOTES:

04	NEW 6 FT. HIGH CHAIN LINK FENCE TYP. U.O.N.
05	EXISTING SEPTIC SYSTEM (VERIFY LOCATION W/ ORIGINAL OWNER / COUNTY)
06	EXISTING SCALE
07	6 FT. HIGH GATE THAT ROLLS PER OWNER
08	ELECTRICAL SUB PANEL
09	EXISTING ELECTRICAL POWER POLE
10	EXISTING SCALE

SITE & ELEVATION NOTES:

12. ALL ADA ACCESSIBLE SIGNS SHALL MEET CURRENT CODE REQUIREMENTS.
13. WHERE TOWEL, SANITARY NAPKINS, WASTE RECEPTACLES, AND OTHER SIMILAR DISPENSING AND DISPOSAL FIXTURE ARE PROVIDED, AT LEAST ONE OF EACH TYPE SHALL BE LOCATED WITH ALL OPERABLE PARTS, INCLUDING COIN SLOTS, WITHING 40 INCHES FROM THE FINISHED FLOOR.
14. FINAL APPROVAL IS SUBJECT TO ACCEPTANCE AFTER A FIELD INSPECTION.
15. COMBUSTIBLE DEBRIS, RUBBISH & WASTE MATERIAL SHALL NOT BE ACCUMULATED WITHIN BUILDINGS. RUBBISH & WASTE MATERIAL SHALL BE REMOVED AS OFTEN AS PRACTICAL.

FIRE NOTES:

3. SEPARATE PERMIT REQUIRED FOR SIGNES, ANSUL SYSTEM, ALARM SYSTEM, FIRE SPRINKLER SYSTEM.
4. SUBMIT PLANS TO AND OBTAIN PERMIT FROM THE FIRE PREVENTION DIVISION FOR THE INSTALLATION OR MODIFICATION OF FIRE SPRINKLER SYSTEM.
5. KNOX BOX REQUIRED AND SHALL BE LOADED WITH THE TENANT SPACE KEY BEFORE FINAL ON THE PERMIT CAN BE APPROVED.
6. ALL REQUIRED FIRE EXTINGUISHERS SHALL HAVE A FIRE MARSHALL TAG.
7. A MIN. OF 2A-10BC RATED FIRE EXTINGUISHER (S) IS REQUIRED FOR 3000 SQ.FT. THE EXTINGUISHER (S) SHALL BE LOCATED SO THAT IT WILL BE UNNECESSARY FOR A PERSON TO TRAVEL MORE THAN 75 FEET TO REACH THE NEAREST EXTINGUISHERS, SHOULD BE MOUNTED ON THE WALL SO THE TOP OF THE EXTINGUISHER IS NO MORE THAN 5 FEET FROM GROUND FLOOR HEIGHT. WHEN POSSIBLE, THE EXTINGUISHER SHOULD BE MOUNTED NEAR EXITS OR IN NORMAL EXIT PATHWAYS. IF NECESSARY, A SIGN SHALL BE POSTED TO CLEARLY INDICATE THE LOCATION OF THE EXTINGUISHER.
8. PLANS, CALCS. AND SPECIFICATIONS SHALL BE SUBMITTED AND APPROVED FOR FIRE SPRINKLER SYSTEM BEFORE FRAMING INSPECTION.
9. OVERHEAD FIRE SPRINKLERS SHALL BE INSPECTED AND APPROVED BY THE FIRE INSPECTOR BEFORE THE T-BAR CEILING SYSTEM CAN BE APPROVED.

SITE & ELEVATION NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS DURING CONSTRUCTION AND SHALL BE RESPONSIBLE FOR ALL DISCREPANCIES BETWEEN DIMENSIONS OF THE ACTUAL AND THOSE SHOWN IN THE DOCUMENTS OR THE ENGINEER APPROVED SHOP DRAWINGS AND ASSUME FULL RESPONSIBILITY FOR PROPER CITY OR COUNTY BUILDING CODE REQUIREMENTS OF THIS PROJECT.
   INSTALLING AND OR CONTRACTOR SHALL VERIY JOB SITE BEFORE SUBMITTING A BID AND / OR COST FOR PROJECT TO OWNER AND / OR CONTRACTOR AND SHALL NOT START CONSTRUCTION UNTIL LOCAL CODE ENFORCEMENT AGENCY HAVE APPROVED AND / OR STAMPED WORKING DRAWINGS.
2. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF CODES. ALL WORK SHALL BE DONE IN ACCORDANCE W/ THE CALIFORNIA RESIDENTIAL CODE (CRC), CALIFORNIA FIRE CODE (CFC) , & ALL OTHER FEDERAL, STATE, COUNTY & CITY ORDINANCES.
3. HOME OWNER & CONTRACTOR IS RESPONSIBLE FOR ANY & ALL CUT, FILL & COMPACTION OF ANY & ALL EARTHWORK PER CRC CHAPTER 4.
4. THE FINISH FLOOR ELEVATION AT ALL ADDITIONS SHALL MATCH EXISTING FINISH FLOOR ELEVATION AND AT NEW CONSTRUCTION SHALL BE ABOVE THE CROWN OF THE STREET AND OR MIN. 8 INCHES ABOVE GRADE U.O.N.
5. THE GROUND ADJACENT TO THE FOUNDATION SHALL BE SLOPED (5%) FOR 10 FEET OR IF NOT PHYSICALLY POSSIBLE PROVIDE 2% SLOPE TO AN APPROVED ALTERNATIVE METHOD FOR DIVERTING WATER. SWALES USED FOR THIS SHALL BE MIN. 2% WHEN WITHIN 10 FEET OF THE BUILDING & MINIMUM SLOPE FOR IMPERVIOUS SURFACES SHALL BE 2% U.O.N. PER CRC R401.3.
   EXCEPTION:
   WEWRE CLIMATIC OR SOIL CONDITIONS WARRANT, THE SLOPE OF THE GROUND AWAY FROM THE BUILDING FOUNDATION IS PERMITTED TO BE REDUCED TO NOT LESS THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE).
   THE PROCEDURE USED TO ESTABLISH THE FINAL GROUND LEVEL ADJACENT TO THE FOUNDATION SHALL ACCOUNT FOR ADDITIONAL SETTLEMENT OF THE BACKFILL.
6. CHEMICAL TOILET AND DRINKING WATER IS REQUIRED ON-SITE DURING CONSTRUCTION AND MAINTAINED REGULARLY (CPC APPENDIX CHAPTER 29).
7. INSTALL STREET ADRESS NUMERALS, AT LEAST 4 INCHES HIGH W/ MIN. 1/2 INCH STROKE, REFLECTORIZED MOUNTED ON A CONTRASTING BACKGROUND CLEARLY VISIBLE FROM THE STREET ON THE STRUCTURE THAT THE CONSTRUCTION PERMIT WAS ISSUED FOR PER CRC R319 U.O.N..
   IF THE DWELLING IS TO BE LOCATED MORE THAN 100 FEET FROM THE PUBLIC ROADWAY, THE HOUSE NUMBERS SHALL BE DISPLAYED UPON A NON-FLAMMABLE SIGN AND POST (MIN. 32 INCHES ABOVE GROUND LEVEL) LOCATED AT THE INTERSECTION OF THE DRIVEWAY AND THE PUBLIC ROAD AND VISIBLE FROM BOTH DIRECTIONS.
8. PROVIDE A MIN. OF 1 LAYER OF NO.15 ASPHALT FELT, COMPLYING W/ ASTM D 226 FOR TYPE 1 FELT OR OTHER APPROVED MATERIALS BEHIND ALL TYPES OF EXTERIOR WALL FINISHES IS REQUIRED PER CRC R703.2 W/ FLASHING AS DESCRIBED IN CRC R703.6.2.1 U.O.N.
9. IF EXTERIOR PLASTER APPLIES TO THIS PROJECT IT SHALL COMPLY W/ CRC R703.6. STUCCO SHALL BE 7/8' INCHES THICK AND TO BE APPLIED W/ THREE-COAT APPLICATION PER CRC TABLE R702.1(3) (U.O.N.). SPECIFY MANUFACTURER & REPORT FOR EXTERIOR TWO-COAT STUCCO SYSTEMS OVER FOAM INSULATION.
10. VENEER SHALL HAVE ANCHOR TIES EVERY 2 SQ.FT. & 16' O.C. HORIZONTALLY, 16' O.C. VERTICALLY, & BE HOOKED TO ENGAGE OR ENCLOSED JOINT REINFORCEMENT, & JOINT REINFORCEMENT SHALL BE CONTINUOUS #9 WIRE OR EQUIVALENT PER CRC R703.7.
11. PROVIDE SPARK ARRESTERS AT CHIMNEY PER CRC R1003.9.1.

LANDSCAPE NOTES:

1. A SERPERATE PERMIT & A DOCUMENTATION PACKAGE IS REQUIRED FOR LANDSCAPES IF EITHER OF THE FOLLOWING APPLY (REFER TO AB 1881):
   a. NEW CONSTRUCTION OR REHABILITATED LANDSCAPES WHICH ARE DEVELOPER INSTALLED IN SINGLE FAMILY PROJECTS W/ A LANSCAPE AREA EQUAL TO OR GREATER THAN 2,500 SQ.FT.
   b. NEW CONSTRUCTION LANSCAPES WHICH ARE HOMEOWNER PROVIDED AND / OR HOMEOWNER HIRED IN SINGLE FAMILY PROJECTS W/ A TOTAL PROJECT LANSCAPE AREA EQUAL TO OR GREATER THAN 5,000 SQ.FT.

FIRE NOTES:

1. APPROVAL OF THIS PLAN DOES NOT AUTHORIZE OR APPROVE ANY OMISSION OR DEVIATION FROM APPLICABLE ADOPTED CODES & ADOPTED STANDARDS.
   FINAL APPROVAL IS SUBJECT TO ACCEPTANCE AFTER A FIELD INSPECTION.
2. VERIFY W/ THE LOCAL FIRE DEPARTMENT IF A AUTOMATIC FIRE SPRINKLER SYSTEM & FIRE ALARM SYSTEM IS REQUIRED TO BE SUBMITTED FOR THIS PROJECT. IF SO A SERPERATE PERMIT WILL BE REQUIRED FOR AUTOMATIC FIRE SPRINKLER SYSTEM DESIGN PER 2016 CFC NFPA 13-D, 1142 OR 2016 CRC, SECTION R313.3 THAT SHALL BE APPLIED FOR AND APPROVED PRIOR TO ISSUANCE OF THIS BUILDING PERMIT.

APPLICABLE CODES: BASED ON THE 2015 INTERNATIONAL CODES

2016 CALIFORNIA ADMINISTRATIVE CODE, TITLE 24 PART 1 (CAC)
2016 CALIFORNIA BUILDING CODE, TITLE 24 PART 2, 8 & 10, VOLUMNS 1 & 2 (CBC)
2016 CALIFORNIA RESIDENCIAL CODE, TITLE 24 PART 2.5 (CRC)
2016 CALIFORNIA ELECTRICAL CODE, TITLE 24 PART 3 (CEC)
2016 CALIFORNIA MECHANICAL CODE, TITLE 24 PART 4 (CMC)
2016 CALIFORNIA PLUMBING CODE, TITLE 24 PART 5 (CPC)
2016 CALIFORNIA ENERGY CODE, TITLE 24 PART 6 (CEEC)
2016 CALIFORNIA FIRE CODE, TITLE 24 PART 9 (CFC)
2016 CALIFORNIA GREEN BUILDING STANDARDS CODE, TITLE 24 PART 11 (CALGREEN)
2016 CALIFORNIA REFERENCE STANDARDS CODE, TITLE 24 PART 12

1. CHANGES FROM THE APPROVED PLANS DURING THE COURSE OF CONSTRUCTION SHALL CAUSE CONSTRUCTION TO BE SUSPENDED UNTIL SUCH TIME AS THE PLANS CAN BE AMENDED BY THE DESIGNER AND SUBMITTED TO THE COUNTY FOR REVIEW AND APPROVAL CRC R106.4

BUILDING INFORMATION:

PROJECT: PROPOSED NEW RECYCLE / BATCH PLANT FOR JB'S CEMENT
USE: BUSINESS AREA
BUSINESS SIGNAGE: SHALL BE REQUIRED UNDER SEPERATE PERMIT
NUMBER OF STORYS: 1
SEISMIC DESIGN CATEGORY: 'D'
EXPOSURE CATEGORY: 'C'
CONSTRUCTION TYPE: VB
AUTOMATIC FIRE SPRINKLER REQUIRED: VERIFY W/ TULARE COUNTY BUILDING DEPT.
HISTORIC PRESERVATION: NO
ZONING: AE-40
FLOOD ZONE: 'A' FEMA08, PANEL 06170C0191TE, BFF = 2 FT. ABV. ADJACENT GRADE
THIS PROJECT IS LOCATED IN A HIGH-RISK FLOOD ZONE

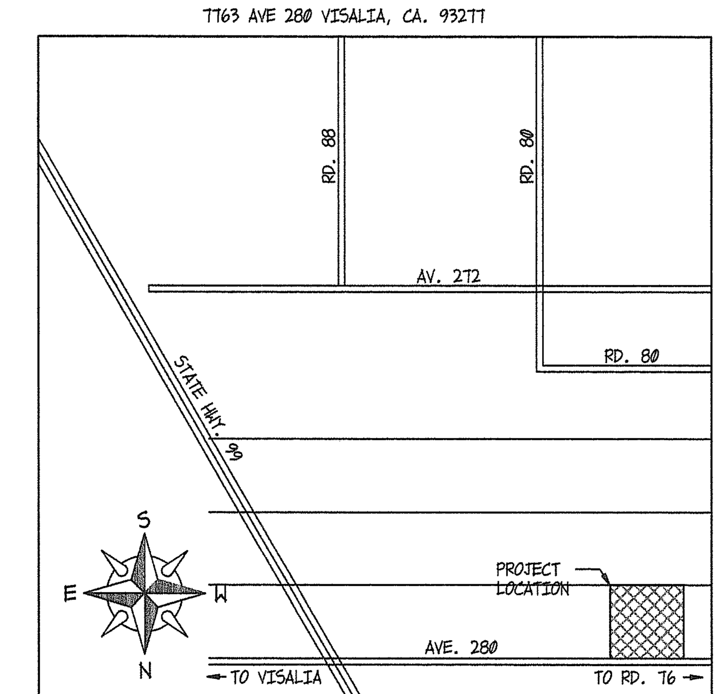
LEGAL DESCRIPTION

PROJECT OWNER: MARK DUNN
PROJECT OWNER PHONE: (559) 733-2281
PROJECT ADRESS: 7763 AVE. 280, VISALIA, CA. 93277
A.P.N.: 119-010-039
ASSESSOR'S MAPS BK. 119, PG. 01 COUNTY OF TULARE, CALIF.

SHEET INDEX

A1 SITE PLAN W/ IMPROVEMENTS

7763 AVE 280 VISALIA, CA. 93277



VICINITY MAP NOT TO SCALE

11-06-17

NOTE: VERIFY AND MATCH EXISTING PER BUILDER / OWNER
NOTE: ALL OPTIONS CAN BE AN EXTRA COST TO OWNER (OWNER SHALL VERIFY W/ BUILDER)
THIS PLAN MAY NOT BE CHANGED OR REPRODUCED WITHOUT WRITTEN CONSENT OF ROBERT COCAGNE

RC DRAFTING
23532 RD. 140 TULARE, CA. 93274
PHONE: 559-303-5595
EMAIL: rcdrafting@aol.com

REVISIONS	BY

Dunn's Construction, Inc.
15602 AVE. 196 VISALIA, CA. 93292 (559) 734-4373

DRAWN BY: ROBERT COCAGNE
DATE: OCT. 31, 2013
SCALE: AS NOTED
JOB #: # 1733
TITLE: SITE PLAN
SHEET NO.: A1

APPENDIX B: VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX B: VASCULAR PLANTS OF THE PROJECT SITE

The vascular plant species listed below were observed on the project site during site surveys conducted by Live Oak Associates, Inc. on July 17, 2018. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland

AMARANTHACEAE—Amaranth Family		
Amaranthus albus	Pigweed Amaranth	FACU
Amaranthus palmeri	Palmer Amaranth	FACU
ASTERACEAE - Sunflower Family		
Erigeron bonariensis	Asthmaweed	FACU
Erigeron canadensis	Canada Horseweed	FACU
Lactuca serriola	Prickly Lettuce	FACU
BRASSICACEAE - Mustard Family		
Capsella bursa-pastoris	Shepherd’s Purse	FACU
CHENOPODIACEAE—Goosefoot Family		
Chenopodium album	Common Lambsquarters	FACU
JUNCACEAE – Rush Family		
Juncus bunfonius	Toad Rush	FACW
MALVACEAE – Mallow Family		
Abutilon theophrasti	Velvetleaf	UPL
Malva parviflora	Cheeseweed	UPL
MORACEAE—Mulberry Family		
Morus alba	White Mulberry	FACU
POACEAE - Grass Family		
Bromus diandrus	Ripgut	UPL
Bromus catharticus	Rescuegrass	UPL
Cynodon dactylon	Bermuda Grass	FAC
Echinochloa crus-galli	Barnyard Grass	FACW
Hordeum murinum ssp. *leporinum*	Barnyard Barley	FAC
Leptochloa fusca ssp. *univerva*	Bearded Sprangletop	FACW
Sorghum halepense	Johnson Grass	FACU
POLYGONACEAE - Buckwheat Family		
Polygonum aviculare	Prostrate Knotweed	FACW
SOLANACEAE - Nightshade Family		
Datura wrightii	Sacred Datura	UPL
Solanum nigrum	Black Nightshade	UPL

APPENDIX C: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

APPENDIX C: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site during the surveys conducted by Live Oak Associates, Inc. on July 17, 2018 have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
Western Fence Lizard (*Sceloporus occidentalis*)
Side-blotched Lizard (*Uta stansburiana*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES (Birds)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (*Cathartes aura*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Swainson's Hawk (*Buteo swainsoni*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (*Falco sparverius*)
Merlin (*Falco columbarius*)
Prairie Falcon (*Falco mexicanus*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: CHARADRIIDAE (Plovers and relatives)
Killdeer (*Charadrius vociferus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
*Rock Dove (*Columba livia*)
Eurasian Collared Dove (*Streptopelia decaocto*)
*Mourning Dove (*Zenaida macroura*)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)

Common Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
Great Horned Owl (*Bubo virginianus*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)
Black-chinned Hummingbird (*Archilochus alexandri*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
*Western Kingbird (*Tyrannus verticalis*)
FAMILY: LANIIDAE (Shrikes)
Loggerhead Shrike (*Lanius ludovicianus*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
Western Scrub Jay (*Aphelocoma coerulescens*)
American Crow (*Corvus brachyrhynchos*)
Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Tree Swallow (*Tachycineta bicolor*)
Cliff Swallow (*Hirundo pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
FAMILY: REGULIDAE (Kinglets)
Ruby-Crowned Kinglet (*Regulus calendula*)
FAMILY: TURDIDAE (Thrushes)
American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings)
European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubescens*)
FAMILY: EMBERIZIDAE (Emberizines)
Savannah Sparrow (*Passerculus sandwichensis*)
White-Crowned Sparrow (*Zonotrichia leucophrys*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
Tricolored Blackbird (*Agelaius tricolor*)
Red-winged Blackbird (*Agelaius phoeniceus*)
Western Meadowlark (*Sturnella neglecta*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
Bullock's Oriole (*Icterus bullockii*)

FAMILY: FRINGILLIDAE (Finches)
House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)
American Goldfinch (*Spinus tristis*)
FAMILY: PASSERIDAE (Old World Sparrows)
*House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)
ORDER: DIDELPHIMORPHIA (Marsupials)
FAMILY: DIDELPHIDAE (Opossums)
Virginia Opossum (*Didelphis virginiana*)
ORDER: CHIROPTERA (Bats)
FAMILY: PHYLLOSTOMIDAE (Leaf-nosed Bats)
Southern Long-nosed Bat (*Leptonycteris curasoae*)
FAMILY: VESPERTILIONIDAE (Evening Bats)
Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Hoary Bat (*Lasiurus cinereus*)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
Audubon Cottontail Rabbit (*Sylvilagus audubonii*)
ORDER: RODENTIA (Rodents)
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)
California Ground Squirrel (*Otospermophilus beecheyi*)
FAMILY: GEOMYIDAE (Pocket Gophers)
*Botta's Pocket Gopher (*Thomomys bottae*)
FAMILY: MURIDAE (Old World Rats and Mice)
Deer Mouse (*Peromyscus maniculatus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and relatives)
Coyote (*Canis latrans*)
Red Fox (*Vulpes vulpes*)
FAMILY: PROCYONIDAE (Raccoons and relatives)
Raccoon (*Procyon lotor*)
FAMILY: MEPHITIDAE (Skunks)
Striped Skunk (*Mephitis mephitis*)

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APPENDIX D: SELECTED PHOTOGRAPHS OF THE PROJECT SITE

Photo 1: Onsite agricultural field.

Photo 2: Ruderal/developed area.

Photo 3: Another view of the onsite ruderal/developed area. The mulberry tree in background is the only tree on the site and immediate vicinity.

APPENDIX C

CULTURAL AND TRIBAL CULTURAL RESOURCES

APPENDIX C.1

TRIBAL CONSULTATION PROCESS

Consultation Notice – Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project																	
TRIBE CONTACTED	REQUEST TYPE		DOCUMENTS SENT					MAILED				CONSULTATION PERIOD		CONSULTATION / ACTIONS		
	AB 52	SB 18	Map	Project Description	SLF Search	CHRIS	Other	Date	E-mail	FedEx	Certified US Mail	Return Receipt	Period Ends	Date	TYPE	Summary
SACRED LAND FILE (SLF) REQUEST																
Native American Heritage Commission	X		X	X	X				X				---		Letter	Response to SLF Search request
CONSULTATION REQUEST LETTERS (CONCURRENT WITH NOP)																
Kern Valley Indian Council Robert Robinson, Co-Chairperson PO Box 401 Weldon, CA 93283	X		X	X				2/1/19			7016207000 0049837332	2/13/19	3/15/19			
Kern Valley Indian Council Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240	X		X	X				2/1/19			7016207000 0049837325	2/13/19	3/15/19			
Santa Rosa Rancheria Rueben Barrios Sr., Chairperson P. O. Box 8 Lemoore, CA 93245	X		X	X				2/1/19			7016207000 0049837318	2/6/19	2/8/19			
Santa Rosa Rancheria Tachi Yokut Tribe Greg Cuara, Cultural Specialist P. O. Box 8 Lemoore, CA 93245	X		X	X				2/1/19			7016207000 0049837301	2/4/19	2/6/19			
Santa Rosa Rancheria Shana Powers, Cultural Specialist P. O. Box 8 Lemoore, CA 93245	X		X	X				2/1/19			7016207000 0049837295	2/4/19	2/6/19			
Torres Martinez Desert Cahuilla Indians Michael Mirelez, Cultural Resource Coordinator P. O. Box 1160 Thermal, CA 92274	X		X	X				2/1/19			7016207000 0049837288	2/4/19	2/6/19			
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P. O. Box 226 Lake Isabella, CA 93240	X		X	X				2/1/19			7016207000 0049837271	2/7/19	2/9/19			
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258	X		X	X				2/1/19			7016207000 0049837264	2/5/19	2/7/19			
Tule River Indian Tribe Environmental Department Felix Christman, Tribal Monitor P. O. Box 589 Porterville, CA 93258	X		X	X				2/1/19			7016207000 0049837257	2/5/19	2/7/19			
Tule River Indian Tribe Environmental Department Kerri Vera, Director P. O. Box 589 Porterville, CA 93258	X		X	X				2/1/19			7016207000 0049837240	2/5/19	2/7/19			
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906	X		X	X				2/1/19			7016207000 0049837349	2/4/19	2/6/19			

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

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Robert Robinson, Co-Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

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Robert Robinson, Co-Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

Kern Valley Indian Council
Julie Turner, Secretary
P. Box 1010
Lake Isabella, CA 93240

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Santa Rosa Rancheria Tachi Yokut Tribe
Rueben Barrios Sr., Chairperson
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Lemoore, CA 93245

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Rueben Barrios Sr., Chairperson
P. O. Box 8
Lemoore, CA 93245

Santa Rosa Rancheria Tachi Yokut Tribe
Cultural Department
Greg Cuara, Cultural Specialist
P. O. Box 8
Lemoore, CA 93245

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Thermal, CA 92274

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P. O. Box 1160
Thermal, CA 92274

Torres Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P. O. Box 1160
Thermal, CA 92274

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P. O. Box 226
Lake Isabella, CA 93240

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P. O. Box 226
Lake Isabella, CA 93240

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P. O. Box 226
Lake Isabella, CA 93240

Tule River Indian Tribe
Neil Peyron, Chairperson
P. O. Box 589
Porterville, CA 93258

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P. O. Box 589
Porterville, CA 93258

Tule River Indian Tribe
Department of Environmental Protection
Felix Christman, Archaeological Monitor
P. O. Box 589
Porterville, CA 93258

Tule River Indian Tribe
Department of Environmental Protection
Felix Christman, Tribal Archaeologist
P. O. Box 589
Porterville, CA 93258

Tule River Indian Tribe
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Felix Christman, Archaeological Monitor
P. O. Box 589
Porterville, CA 93258

Tule River Indian Tribe
Environmental Department
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

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Tule River Indian Tribe
Environmental Department
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

Wukasche Indian Tribe/
Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

Wuksache Indian Tribe/
Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

Wuksache Indian Tribe/
Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Torres Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P. O. Box 1160
Thermal, CA 92274

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Mr. Mirelez,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
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<u>Sacred Lands File Search</u>

A Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), returned on December 26, 2018, indicated negative results. The results of the SLF are available to your Tribal Representative(s) if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter. Otherwise, results of the SLF search will be made available upon the release of the EIR during the public review/comment period.

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If your Tribe does not provide a response to this request within thirty (30) days of receipt of this letter, the County's environmental record will indicate no response was provided and, as such, there are no tribal cultural resources of concern.

Notice of Preparation

In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will prepare an EIR to evaluate the environmental effects associated with the Dunn Asphalt and Concrete Batch Plant Project. The NOP for the EIR was mailed to tribal representatives via certified mail on January 18, 2019. The NOP is available on the County website for a 30-day public review period, beginning Friday, January 18, 2019 and ending on Tuesday, February 19, 2019, at:

http://tularecounty.ca.gov/rma/index.cfm/projects/planning-projects/applicant-projects/dunn-asphalt-and-concrete-batch-plant/

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If your Tribe opts to decline an opportunity to consult on this project and does not want to receive the written Notice of Availability of the draft EIR, please provide written correspondence indicating such.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact Jessica Willis, by phone at (559) 624-7122, or by email at jwillis@co.tulare.ca.us.

Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

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VISALIA, CA 93277
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FAX (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
PO Box 1010
Lake Isabella, CA 93240

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Chairperson Robinson,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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If your Tribe opts to decline an opportunity to consult on this project and does not want to receive the written Notice of Availability of the draft EIR, please provide written correspondence indicating such.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact Jessica Willis, by phone at (559) 624-7122, or by email at jwillis@co.tulare.ca.us.

Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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FAX (559) 730-2653

Michael Washam	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Kern Valley Indian Council
Julie Turner, Secretary
PO Box 1010
Lake Isabella, CA 93240

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Ms. Turner,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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California Historical Resources Information System Search

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Notice of Preparation

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If your Tribe opts to decline an opportunity to consult on this project and does not want to receive the written Notice of Availability of the draft EIR, please provide written correspondence indicating such.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact Jessica Willis, by phone at (559) 624-7122, or by email at jwillis@co.tulare.ca.us.

Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 South Mooney Blvd
Visalia, CA 93277
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Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Santa Rosa Rancheria
Tachi Yokut Tribe
Rueben Barrios Sr., Chairperson
P. O. Box 8
Lemoore, CA 93245

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Chairperson Barrios,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact Jessica Willis, by phone at (559) 624-7122, or by email at jwillis@co.tulare.ca.us.

Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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Michael Washam	Economic Development and Planning
Reed Schenke	Public Works
Sherman Dix	Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Santa Rosa Rancheria
Tachi Yokut Tribe
Greg Cuara, Cultural Specialist
P. O. Box 8
Lemoore, CA 93245

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Mr. Cuara,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
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FAX (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Santa Rosa Rancheria
Tachi Yokut Tribe
Shana Powers, Cultural Specialist
P. O. Box 8
Lemoore, CA 93245

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Ms. Powers,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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RESOURCE MANAGEMENT AGENCY

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Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Chairperson
P.O. Box 226
Lake Isabella, CA 93240

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Chairperson Gomez,

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Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
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hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

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Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Tule River Indian Tribe
Environmental Department
Felix Christman, Tribal Monitor
P. O. Box 589
Porterville, CA 93258

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Mr. Christman,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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<u>Sacred Lands File Search</u>

A Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), returned on December 26, 2018, indicated negative results. The results of the SLF are available to your Tribal Representative(s) if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter. Otherwise, results of the SLF search will be made available upon the release of the EIR during the public review/comment period.

California Historical Resources Information System Search

A Cultural Resources Study was prepared for the project site by ASM Affiliates, Inc. The Cultural Resources Study includes a California Historical Resources Information System (CHRIS) search and will be available to your Tribal Representative(s) if a written request for consultation is submitted to the County within thirty (30) days of receipt of this letter. Otherwise, the Cultural Resources Study will be made available upon the release of the EIR during the public review/comment period.

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Notice of Preparation

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http://tularecounty.ca.gov/rma/index.cfm/projects/planning-projects/applicant-projects/dunn-asphalt-and-concrete-batch-plant/

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Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact Jessica Willis, by phone at (559) 624-7122, or by email at jwillis@co.tulare.ca.us.

Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Tule River Indian Tribe
Neil Peyron, Chairperson
P. O. Box 589
Porterville, CA 93258

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Chairperson Peyron,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine; and
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historical Resources including historic or prehistoric ruins and any burial ground, archaeological, or historic site.

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Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Tule River Indian Tribe
Environmental Department
Kerri Vera, Director
P. O. Box 589
Porterville, CA 93258

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Ms. Vera,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR

January 31, 2019

Wuksachi Indian Tribe
Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

RE: Project Notification Pursuant to Assembly Bill (AB) 52 and Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Dunn Asphalt & Concrete Batch Plant (PSP 18-049) Project

Dear Chairperson Woodrow,

Pursuant to the provisions of AB 52, as the lead agency under the California Environmental Quality Act (CEQA), the County of Tulare hereby extends an invitation to consult on the California Environmental Quality Act (CEQA) review of the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) Project in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural places including:

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Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail if you have any questions or need additional information. If you need immediate assistance and I am unavailable, please contact Jessica Willis, by phone at (559) 624-7122, or by email at jwillis@co.tulare.ca.us.

Sincerely,

Hector Guerra
Chief Environmental Planner
Environmental Planning Division
(559) 624-7121
hguerra@co.tulare.ca.us

APPENDIX C.2

SACRED LAND FILE (SLF) SEARCH

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

December 26, 2018

Jessica Willis
Tulare County Resource Management Agency

Sent Via Email: jwillis@co.tulare.ca.us

RE: Dunn Asphalt and Concrete Batch Plant, Goshen, Tulare County

Dear Ms. Willis:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult**. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.Souza@nahc.ca.gov .

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

Native American Heritage Commission
Native American Contacts List
12/24/2018

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA 93240
(661) 340-0032 Cell

Kawaiisu
Tubatulabal

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906
kwood8934@aol.com
(831) 443-9702

Foothill Yokuts
Mono
Wuksache

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010
Lake Isabella, CA 93283
brobinson@iwvisp.com
(760) 378-2915 Cell

Tubatulabal
Kawaiisu

Santa Rosa Rancheria Tachi Yokut Tribe
Rueben Barrios Sr., Chairperson
P.O. Box 8
Lemoore, CA 93245
(559) 924-1278
(559) 924-3583 Fax

Tache
Tachi
Yokut

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226
Lake Isabella, CA 93240
(760) 379-4590
(760) 379-4592 Fax

Tubatulabal

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, CA 93258
neil.peyron@tulerivertribe-nsn.gov
(559) 781-4271
(559) 781-4610 Fax

Yokuts

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Dunn Asphalt and Concrete Batch Plant, Goshen, Tulare County.

APPENDIX C.3

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM (CHRIS) SEARCH

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

Record Search 18-510

To: Hector Guerra
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Date: December 14, 2018

Re: Dunn Asphalt and Concrete Batch Plant

County: Tulare

Map(s): Goshen 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, Historic Property Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND WITHIN THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies conducted within the project area. There has been one cultural resource study conducted within the one-half mile radius, TU-00534.

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND WITHIN THE ONE-HALF MILE RADIUS

There are no recorded cultural resource within project area and it is not known if any exist there. There is one recorded resource within the one-half mile radius, P-54-002179, the Evans Ditch.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, or the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project consists of construction of a concrete batch plant, recycling of concrete and asphalt, and a hot mix asphalt batch plant. No information was given as to the current state of the property. Because a cultural resources study has never been conducted on this project area, it is unknown if any cultural resources are present. If the property is vacant, prior to ground disturbance activities, we recommend a qualified, profession consultant conduct a field survey to determine if cultural resources are present. If any structures more than 45 years or older exist on the property, prior to alteration or demolition, we recommend they be recorded and evaluated for historical significance by a qualified, professional consultant. If the property is currently developed and no structures over 45 years old are present, then no further cultural resource investigation is recommended at this time. However, if cultural resources are unearthed during any ground disturbance activities, all work should halt in the area of the find and a qualified, professional consultant should be called out to assess the findings and make the appropriate mitigation recommendations. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file in order to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:

Celeste M. Thomson, Coordinator

Date: December 14, 2018

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Southern San Joaquin Valley Information Center
CA Historical Resources Information System
California State University, Bakersfield
Mail Stop: 72 DOB / 4010
9001 Stockdale Highway
Bakersfield, California 93311-1022

SANTA CLARITA
CA 913
17 JAN '19
PM 8 L

U.S. POSTAGE PITNEY BOWES
ZIP 93311 $ 000.47⁰
02 4W
0000347776 JAN 17 2019

Tulare County
Resource Management Agency
JAN 2 2 2019
REC'D

93277-939461

APPENDIX C.4

PHASE 1 SURVEY

Final

PHASE I SURVEY, 7763 AVENUE 280, VISALIA, TULARE COUNTY, CALIFORNIA

Prepared for:

Mr. Richard Walker
4-Creeks, Inc.
324 S. Santa Fe, Suite A
Visalia, CA 93292

Prepared by:

David S. Whitley, Ph.D., RPA

and

Peter A. Carey, M.A. RPA

ASM Affiliates, Inc.
20424 West Valley Blvd., Suite A
Tehachapi, California 93561

September 2018

PN 30600.00

David S. Whitley, Ph.D., RPA

TABLE OF CONTENTS

LIST OF FIGURES

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MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for a proposed 20-acres batch plant, located at 7763 Avenue 280 (APN 119-010-039), Visalia, Tulare County, California. ASM Affiliates, Inc., conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with compliance with the California Environmental Quality Act (CEQA)

A records search of site files and maps was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. A Sacred Lands File Request was also submitted to the Native American Heritage Commission (NAHC). Letters and follow-up phone calls were made to tribal organizations on the NAHC contact list, to determine whether tribal cultural resources were known in or near the Project. These investigations determined that the Project area had not been previously surveyed and that no sites or tribal cultural resources were known to exist within or near it.

The Phase I survey fieldwork was conducted in August 2018 with parallel transects spaced at 15-meter intervals walked along the approximately 20-acre study area. No archaeological resources of any kind were discovered within the project area. Based on these results, the proposed batch plant project does not have the potential to result in significant impacts to historical or unique cultural resources, and no additional archaeological work is recommended.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc., was retained by 4-Creeks, Inc., to provide a Phase I cultural resources survey for a proposed batch plant located at 7763 Avenue 280 (APN 119-010-039), Visalia, Tulare County, California (Figure 1). The study was undertaken to assist with compliance with the California Environmental Protection Act (CEQA). The investigation was conducted, specifically, to ensure that adverse impacts to significant or unique historical resources do not occur as a result of the proposed project.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and Robert Azpitarte, B.A., ASM Associate Archaeologist, conducted the fieldwork.

This document constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; Native American outreach; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 PROJECT LOCATION

The proposed batch plant project is located on the south side of Avenue 280/West Caldwell Avenue, approximately 0.65-miles west of State Highway 99, on the open flats of the San Joaquin Valley. Elevation within the project area, which is flat, is approximately 285-ft above mean sea level (amsl).

1.2 PROJECT DESCRIPTION AND APE

The proposed project consists of the operation of a portable concrete batch plant, a portable concrete and asphalt recycling plant, and a hot mix asphalt plant, with storage for appropriate materials for and output of each of these systems. The project location currently contains three standing structures: an existing office building, shop, and well with water tank storage above. All three of these structures will be retained and used as part of the batch plant facility.

1.3 REGULATORY CONTEXT

1.3.1 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

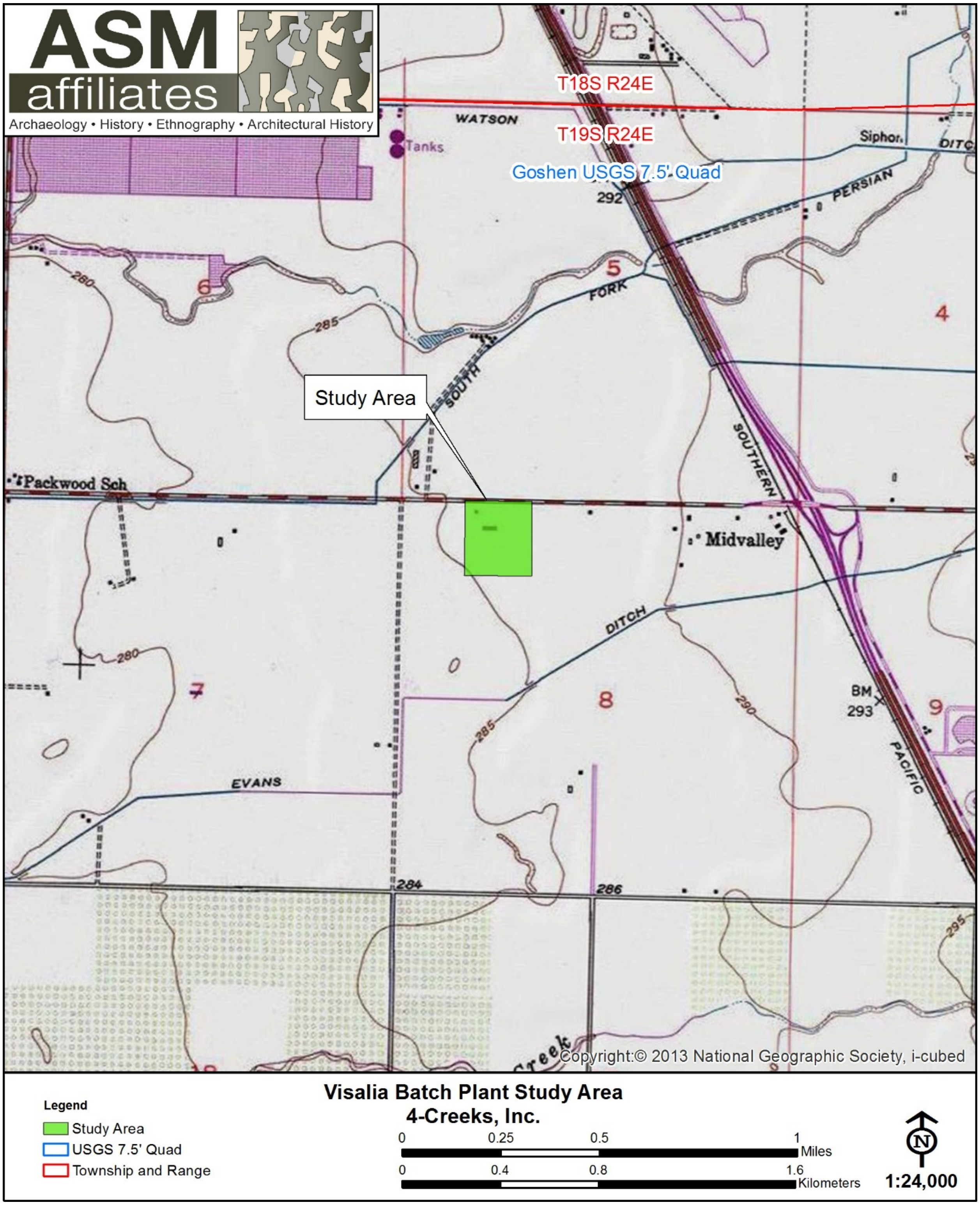

Figure 1. Location of the 7763 Avenue 280 Project, Tulare County, California

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the project is located at 285-feet elevation on the open flats of the San Joaquin Valley. Prior to the appearance of agriculture, starting in the nineteenth century, this location within the largest oak valley woodland in California (Preston 1981). Historically, and likely prehistorically, riparian environments would have been present along the drainages, waterways and marshes. The study area and immediate surroundings have been farmed and grazed for many years and no native vegetation is present. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study area prior to cultivation. According to the geoarchaeological model developed by Meyer et al. (2010), the study area has a moderately high potential for buried archaeological deposits. No significant ground-surface excavation is anticipated for the batch plant set-up and operation, however, indicating that it would be unlikely that subsurface archaeological deposits, if present, would be disturbed.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation, to the east, and Santa Rosa Rancheria, to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Following Kroeber (1925: Plate 47), the project location most likely lies in Telamni Yokuts territory No historic villages are recorded for the immediate project area, per se, by Kroeber (1925) or by Latta (1977), however. The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake west of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7,500 to 4,000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California, the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at that time (Sutton 2009, rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W & S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3,500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W & S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W & S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W & S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W & S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1,500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about A.D. 1860. It included major droughts matched by intermittent “mega-floods,” and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90% of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (ibid). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W & S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located northwest of the current study area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California; suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of state wide ‘No-Fence’ laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley:

Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (three feet wide by two feet deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended beyond Kern County, however. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/).

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift in the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield and Visalia where their descendants live today (Boyd 1997).

The town of Visalia, originally called Four Creeks, was founded in 1852 and is believed to be the earliest settlement in the San Joaquin Valley between Los Angeles and the Stockton area. It was made the county seat of Tulare County in 1853 and became a stop on the Butterfield Overland Mail stage route, which ran from Los Angeles to Stockton, in 1858. Camp Babbitt was created one-mile outside of Visalia during the Civil War, due to a significant number of southern sympathizers in the area. In 1874 the town was incorporated. Visalia has continued to grow due to industry and agriculture in the surrounding area, currently having a population of over 130,000 people (https://www.visalia.city/about/history_of_visalia.asp; accessed on 9/1/2018)

2.5 RESEARCH DESIGN

2.5.1 Pre-Contact Archaeology

Previous research and the nature of the pre-contact archaeological record suggest two significant NRHP themes, both of which fall under the general Pre-Contact Archaeology area of significance. These are the Expansion of Pre-Contact Populations and Their Adaptation to New Environments; and Adaptation to Changing Environmental Conditions.

The Expansion of Pre-Contact Populations and Their Adaptation to New Environments theme primarily concerns the Middle Horizon/Holocene Maximum. Its period of significance runs from about 4,000 to 1,500 YBP. It involves a period during which the prehistoric population appears to have expanded into a variety of new regions, developing new adaptive strategies in the process.

The Adaptation to Changing Environmental Conditions theme is partly related to the Holocene Maximum, but especially to the Medieval Climatic Anomaly. The period of significance for this theme, accordingly, extends from about 4,000 to 800 YBP. This theme involves the apparent collapse of many inland populations, presumably with population movements to better environments such as the coast. It is not yet known whether the southern San Joaquin Valley, with its system of lakes, sloughs and swamps, experienced population decline or, more likely, population increase due to the relatively favorable conditions of this region during this period of environmental stress.

The range of site types that are present in this region include:

- Villages, primarily located on or near permanent water sources, occupied by large groups during the winter aggregation season;
- Seasonal camps, again typically located at water sources, occupied during other parts of the year tied to locally and seasonally available food sources;
- Special activity areas, especially plant processing locations containing bedrock mortars (BRMs), commonly (though not exclusively) near existing oak woodlands, and invariably at bedrock outcrops or exposed boulders;
- Stone quarries and tool workshops, occurring in two general contexts: at or below naturally occurring chert exposures on the eastern front of the Temblor Range; and at quartzite cobble exposures, often on hills or ridges;
- Ritual sites, most commonly pictographs (rock art) found at rockshelters or large exposed boulders, and cemeteries, both commonly associated with villages; and
- A variety of small lithic scatters (low density surface scatters of stone tools).

The first requisites in any research design are the definition of site age/chronology and site function. The ability to determine either of these basic kinds of information may vary between survey and test excavation projects, and due to the nature of the sites themselves. BRM sites without associated artifacts, for example, may not be datable beyond the assumption that they post-date the Early Horizon and are thus less than roughly 4,000 years old.

A second fundamental issue involves the place of site in the settlement system, especially with respect to water sources. Because the locations of the water sources have sometimes changed over time, villages and camps are not exclusively associated with existing (or known historical) water sources (W&S Consultants 2006). The size and locations of the region's lakes, sloughs and delta channels, to cite the most obvious example, changed significantly during the last 12,000 years due to major paleoclimatic shifts. This altered the area's hydrology and thus prehistoric settlement patterns. The western shoreline of Tulare Lake was relatively stable, because it abutted the Kettleman Hills. But the northern, southern and eastern shorelines comprised the near-flat valley floor. Relatively minor fluctuations up or down in the lake level resulted in very significant changes in the areal expression of the lake on these three sides, and therefore the locations of villages and camps. Although perhaps not as systematic, similar changes occurred with respect to stream channels and sloughs, and potential site locations associated with them. This circumstance has implications for predicting site locations and archaeological sensitivity. Site sensitivity is then hardest to predict in the open valley floor, where changes in stream courses and lake levels occurred on numerous occasions.

Nonetheless, the position of southern San Joaquin Valley prehistory relative to the changing settlement and demographic patterns seen in surrounding areas is still somewhat unknown (cf. Siefkin 1999), including to the two NRHP themes identified above. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the effects of desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Archaeological sites would primarily be evaluated for NRHP eligibility under Criterion D, research potential.

2.5.2 Historical Archaeology: Native American

Less research has been conducted on the regional historical archaeological record, both Native American and Euro-American. For Native American historical sites, the ethnographic and ethnohistoric periods in the southern San Joaquin Valley extended from first Euro-American contact, in AD 1772, to circa 1900, when tribal populations were first consolidated on reservations. The major significant historic NRHP themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley “horse culture,” including raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases (especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); the origins of the reservation system and the development of new tribal organizations and ethnic identities; and, ultimately, the adoption of the Euro-American society’s economic system and subsistence practices, and acculturation into that society.

Site types that have been identified in the region dating to the ethnographic/ethnohistoric period of significance primarily include villages and habitations, some of which contain cemeteries and rock art (including pictographs and cupules). Dispersed farmsteads, dating specifically from the reservation period or post-1853, would also be expected. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization (from traditional nucleated villages to single family dispersed farmsteads); the breakdown of traditional trading networks with their replacement by new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education.

For Criteria A, C and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criteria C and A. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.5.3 Historical Archaeology: Euro-American

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Caltrans has also identified an evaluation matrix aiding determinations of eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

1. *Association* refers to the ability to link an assemblage of artifacts, ecofacts, and other cultural remains with an individual household, an ethnic or socioeconomic group, or a specific activity or property use.

2. *Integrit*y addresses the physical condition of the deposit, referring to the intact nature of the archaeological remains. In order for a feature to be most useful, it should be in much the same state as when it was deposited. However, even disturbed deposits can yield important information (e.g., a tightly dated deposit with an unequivocal association).

3. *Materials* refers to the number and variety of artifacts present. Large assemblages provide more secure interpretations as there are more datable items to determine when the deposit was made, and the collection will be more representative of the household, or activity. Likewise, the interpretive potential of a deposit is generally increased with the diversity of its contents, although the lack of diversity in certain assemblages also may signal important behavioral or consumer patterns.

4. *Stratigraphy* refers to the vertically or horizontally discrete depositional units that are distinguishable. Remains from an archaeological feature with a complex stratigraphic

sequence representative of several events over time can have the added advantage of providing an independent chronological check on artifact diagnosis and the interpretation of the sequence of environmental or sociocultural events.

5. *Rarity* refers to remains linked to household types or activities that are uncommon. Because they are scarce, they may have importance even in cases where they otherwise fail to meet other thresholds of importance (Caltrans 2007:209).

For agricultural sites, Caltrans (2007) has identified six themes to guide research: Site Structure and Land Use Pattern; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Expected site types would include farm and ranch homesteads and facilities, line camps, and refuse dumps. In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. However, they also potentially could be eligible under Criteria A and B for their associate values with major historical trends or individuals. Historical landscapes might also be considered.

Historical structures, which are most likely to be pertinent to the current study area, are typically evaluated for NRHP eligibility under Criteria A and/or B, for their associated values with major historical trends or individuals, and C for potential design or engineering importance.

3. ARCHIVAL RECORDS SEARCH

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the study area had been previously surveyed for cultural resources, and/or whether any such resources were known to exist on any of them, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on 24 July 2018. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest.

According to the IC records (Confidential Appendix A), no previous surveys have been completed within the project area and no tribal or archaeological resources are known to exist within it. One previous survey had been completed within 0.5-miles of the project area (IC# TU-534; Peak et al. 1975, Archaeological Assessment of Cultural Resources, Mid-Valley Canal Project, Fresno, Tulare, Merced and Kings Counties, California). Only a single cultural resource had been recorded within 0.5-miles of the project area: P-54-2179/CA-TUL-3053H, the Evans Ditch, located northeast of the project area.

A records search was also conducted at the Native American Heritage Commission (NAHC) Sacred Lands File (Confidential Appendix A). No sacred sites or tribal cultural resources were known in or in the vicinity of the APE. Outreach letters were then sent to the tribal contact list provided by the NAHC; follow-up phone calls were made one month later. No responses were received from any of the contacts.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Phase I survey of the 7763 Avenue 280 project area was conducted by Robert Azpitarte, B.A., ASM Associate Archaeologist, on 9 August 2018. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using DPR 523 forms. Parallel survey transects spaced at 15-m apart were employed for the inventory. These covered the entirety of the approximately 2-ac APE.

4.2 SURVEY RESULTS

The 20-acres project area is open, flat land surrounded by corn fields to the east, west and south (Figure 2). The groundsurface of the project area has been heavily disturbed by previous agricultural use. A medium to low density of low ground cover, consisting primarily of intrusive grasses, was present at the time of the survey. Groundsurface visibility was however adequate for intensive surveying.

A L-shaped compound containing three standing structures is present in the northwest corner of the 20-acres property (Figure 3). This compound is surrounded by a 6-feet high chain link fence. The structures consist of a stucco office/administration building, a large sheet-metal-sided barn/shop, and a well with water tower overhead. Based on USGS topographical quadrangles, these structures were built sometime before 1971, probably during the late 1960s. They are still in use and will be retained and used as part of the batch plant facility. A large stock-pile of broken concrete is located between the office building and water tower, presumably in anticipation of future concrete recycling at this location.

No archaeological resources of any kind were identified within the 20-acres project area.

Figure 2. Batch plant project overview, from southwest.

Figure 3. Standing structures within batch plant project area, looking south from Avenue 280.

5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I survey was conducted for 7763 Avenue 280 (APN 119-010-039), a proposed batch plant, Visalia, Tulare County, California. A records search was conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. This indicated that the study area had not been previously surveyed and that no cultural resources were known to exist within it. The Native American Heritage Commission Sacred Lands Files were also consulted and no sacred sites or tribal cultural resources were known within or in the vicinity of the APE.

The Phase I survey fieldwork was conducted with parallel transects spaced at 15-meter intervals across the approximately 20-acres project area. No archaeological resources of any kind are present within this property.

5.1 RECOMMENDATIONS

An intensive Class III inventory demonstrated that the proposed batch plant project study area lacks archaeological resources of any kind. The proposed project therefore does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. In the unlikely event that cultural resources are encountered during project construction or use, however, it is recommended that an archaeologist be contacted to assess the discovery.

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CONFIDENTIAL APPENDIX A:

Records Search and Native American Heritage Commission Outreach

APPENDIX D

GEOLOGY AND SOILS REPORT

GEOLOGY AND SOILS REPORT FOR PROPOSED CONCRETE AND ASPHALT BATCH PLANT

PREPARED FOR:

DUNN'S CONSTRUCTION, INC.
15602 AVENUE 196
VISALIA, TULARE COUNTY, CALIFORNIA 93292
APN 119-010-039

PREPARED BY:

MASON GEOSCIENCE

PO BOX 1020
EXETER, CA 93221

SEPTEMBER 27, 2018

SUBMITTED TO:
4CREEKS, INC.
324 SOUTH SANTA FE STREET, SUITE A
VISALIA, CALIFORNIA 93292

MASON
GEOSCIENCE

September 27, 2018

To:
Mr. Richard Walker
Senior Planner/Senior Project Manager
4Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, CA 93292

From:
Fred Mason
Professional Geologist
Mason Geoscience
PO Box 102
Exeter, CA 93221

SUBJECT: GEOLOGY AND SOILS REPORT FOR PROPOSED CONCRETE AND ASPHALT BATCH PLANT, DUNN'S CONSTRUCTION, 7763 AVENUE 280, APN# 119-010-039, VISALIA, TULARE COUNTY, CALIFORNIA.

Dear Mr. Walker:

The attached report has been prepared to assess potential geologic hazards and impacts to the site including from an on-site wastewater treatment system (OWTS). The report includes discussion of the natural setting of the site and requirements outlined in the Tulare County Local Area Management Program (LAMP) for OWTS. If you have any questions or concerns, please contact me at (559) 936-3695.

Respectfully submitted,

Fred Mason, PG, CEG, CHG
Principal Geologist

PROFESSIONAL GEOLOGIST
FREDERICK A. MASON
No. 8442
Exp. 10/19
STATE OF CALIFORNIA
9/27/18

CERTIFIED ENGINEERING GEOLOGIST
FREDERICK A. MASON
No. 2660
Exp. 10/19
STATE OF CALIFORNIA
9/27/18

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I. INTRODUCTION

Dunn's Construction, Inc. is proposing to build a concrete and asphalt batch plant on a 19.98 acre site in Visalia, California (Figures 1 and 2). The site currently contains an approximate 9,000 square foot shop and approximate 900 square foot residence that appears to have been converted to an office. The office septic system is constructed with a dual chamber septic tank that is four feet wide by nine feet long by four feet deep and approximately 1,000 gallon volume. Effluent from the septic tank is leached into a four foot diameter by 30 foot deep concrete lined seepage pit.

Dunn's Construction is proposing a concrete mixing plant, cement powder storage, aggregate storage, and batch operations to produce ready mix concrete. Cement and fly ash will be stored in silos approximately 40 feet tall. The aggregate will be pushed into piles approximately 15 feet tall as trucks bring material in. It is estimated that the project will produce approximately 100,000 cubic yards of concrete per year resulting in approximately 200 loads of concrete going out per week and 110 loads of aggregate and 20 loads of cement coming in per week.

A portable concrete and asphalt recycling plant will be onsite a couple times per year depending on the stockpile of materials available. The project will accept broken concrete and asphalt brought in by contractors to be stockpiled approximately 15 feet high. Once there is enough rubble, a portable crushing plant will take the rubble and mix it into road base. It is estimated that approximately 30,000 tons of base rock will be produced per year resulting in approximately 30 loads of rubble coming in per week and 25 loads of base going out per week, on average.

A proposed hot mix asphalt plant will be similar to the concrete plant except the material will be heated. The aggregate will be brought in and dumped into stockpiles approximately 15 feet high until used in the plant. The asphalt plant will receive oil to be stored in containers and heated with propane. The oil and aggregate will be mixed together and stored in a silo approximately 40 feet tall until shipped out. It is estimated that approximately 125,000 tons will be produced per year resulting in approximately 100 loads of aggregate coming in per week, seven loads of oil coming in per week, five loads of propane coming in per week, and approximately 100 loads of asphalt going out per week.

Site details are as follows:

Current Facility Name:------------------Dunn's Construction Inc.

Address:-----------------------------------7763 Avenue 280, Visalia, California

County: ------------------------------------Tulare County

Assessor's Parcel Numbers------------119-010-039

Township, Range, Section: ------------Township 19 South, Range 24 East, Section 8

Baseline Meridian:----------------------Mount Diablo Baseline and Meridian

Owner: ------------------------------------Mark Dunn
Dunn's Construction, Inc.
15602 Ave 196, Visalia, California, 93292
(559) 734-5373

A. Purpose and Scope

This report has been prepared to assess potential geologic hazards and impacts to the site including information for an on-site wastewater treatment system (OWTS). The geology and hydrogeology of the site are important factors regarding OWTS. Therefore, data pertaining to the geology and hydrogeology of the site including soil, rock, and groundwater were evaluated.

The assessment required reviewing geologic and hydrogeologic information for the site and includes qualitative and quantitative geologic and hydrogeologic data. These data, submitted herein, include discussion of the natural setting of the site and requirements outlined in the Tulare County Local Area Management Program (LAMP) for OWTS. A California Environmental Quality Act (CEQA) checklist is included with discussion regarding potential environmental impacts from the proposed project. The environmental impacts with regard to CEQA include thresholds of significance as identified in the CEQA checklist and relate to the following criteria.

- Located on a fault line
- Hazard to people or property
- Project subject to landslides
- Located on a liquefaction zone

B. Regulatory Requirements

1. California Environmental Quality Act (CEQA) Requirements

The Draft Environmental Impact Report (DEIR) addresses potential impacts to Geology and Soils. As required in Section 15126, all phases of the proposed project will be considered as part of the potential environmental impact.

2. Federal Agencies & Regulations

None that apply to the proposed Project.

3. State Agencies & Regulations

i. Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 directs the Department of Conservation, California Geological Survey to identify and map areas prone to liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the SHMA is to minimize loss of life and property through the identification, evaluation, and mitigation of seismic hazards.

Staff geologists in the Seismic Hazard Zonation Program gather existing geological, geophysical and geotechnical data from numerous sources to produce the Seismic Hazard Zone Maps. They integrate and interpret these data regionally in order to evaluate the severity of the seismic hazards and designate as Zones of Required Investigation (ZORI) those areas prone to liquefaction and earthquake–induced landslides. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes (Fact Sheet, 2018).

ii. California Building Code

The California Building Standards Code is the established minimum standard for the design and construction of buildings and structures in California. State law mandates that local government enforce Title 24 standards or approved local ordinances. January 1, 2017 is the statewide effective date, established by the California Building Standards Commission (CBSC), for the 2016 California Building Standards Code. All applications for a building permit that occur on or after January 1, 2017 are subject to compliance with the 2016 Code (CBC, 2016).

iii. Alquist-Priolo Earthquake Fault Zoning Act

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to regulate development near active faults so as to mitigate the hazard of surface fault rupture. The stated intent of the Act is to "…provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults". The Act also requires the State Geologist to compile maps delineating earthquake fault zones and to submit maps to all affected cities, counties, and state agencies for review and comment. For the last 44 years, Special Publication 42 (SP 42) has been the vehicle by which the State Geologist, through the California Geological Survey, has informed affected agencies and the general public how and where Alquist-Priolo Earthquake Fault Zones are prepared (SP 42, 2018).

4. Local Policy & Regulations

i. Tulare County General Plan Policies

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the proposed project are listed below.

ERM-7.2 Soil Productivity - The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other similar agencies and organizations.

ERM-7.3 Protection of Soils on Slopes - Unless otherwise provided for in the General Plan, building and road construction on slopes of more than 30 percent shall be prohibited, and development proposals on slopes of 15 percent or more shall be accompanied by plans for control or prevention of erosion, alteration of surface water runoff, soil slippage, and wildfire occurrence.

HS-2.1 Continued Evaluation of Earthquake Risks - The County shall continue to evaluate areas to determine levels of earthquake risk.

HS-2.4 Structure Siting - The County shall permit development on soils sensitive to seismic activity permitted only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity.

HS-2.7 Subsidence - The County shall confirm that development is not located in any known areas of active subsidence. If urban development may be located in such an area, a special safety study will be prepared and needed safety measures implemented. The County shall also request that developments provide evidence that its long-term use of groundwater resources, where applicable, will not result in notable subsidence attributed to the new extraction of groundwater resources for use by the development.

HS-2.8 Alquist-Priolo Act Compliance - The County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones (pursuant to and as determined by the Alquist-Priolo Earthquake Fault Zoning Act; Public Resource code, Chapter 7.5) unless the specific provision of the Act and Title 14 of the California Code of Regulations have been satisfied.

II. SITE DESCRIPTION

The site is located near the southwest boundary of the City of Visalia within a predominantly agricultural setting (Figure 1). The current site is unoccupied and comprises approximately 20 acres with a shop and former residence converted to an office. The shop and office occupy approximately 2.5 acres within the 20 acre parcel. The office and shop are surrounded by locked chain-link fencing. The remaining parcel is farmed in seasonal crops. There is one domestic water well on site within the fenced area connected to an above ground water storage tank. There are two agricultural water wells on the site located near the northeast corner of the site (Figure 2). The northernmost well is an older well and is not in use. A newer, approximately three year old well, is also located near the northeast corner of the site 160 feet south of the older agricultural well.

A. Site Location and Access

The study area is located within the Kaweah Subbasin of the Tulare Lake Hydrologic Region of the San Joaquin Valley that comprises the southern extent of the Great Central Valley of California. The city of Visalia and site are situated within the farming region of Tulare County. Predominant crops grown around the site include alfalfa, corn, cotton, milo, wheat, walnuts, and almonds.

To access the site from the north of Visalia from the intersection of Highway 198 and Highway 99, continue 2.5-miles south to the Avenue 280 (Caldwell Avenue) off-ramp. Go west on Avenue 280 0.8-miles to the site on the south side of Avenue 280. From the south, go approximately 5-miles north from Tulare to the Avenue 280 exit and go west 0.8-miles. The site is on the south side of Avenue 280 (Figure 1).

B. Topographic Setting and Drainage Patterns

Topography of the site and surrounding vicinity is relatively flat with a ground surface slope down to the west-southwest of approximately 6-feet per mile (0.1% slope) (Figure 1). Surface water drainage is managed predominantly by farming and irrigation in the region. Fields are routinely leveled by laser to direct irrigation to tailwater ponds. The South Fork of the Persian Ditch is located 1,110-feet northwest of the site. Evans Ditch is located 1,180-feet southeast of the site. These canals direct surface water for irrigation of surrounding farmland. Regional drainage follows topography generally from northeast to southwest.

C. Proposed Development

The proposed development will include a concrete mixing plant, cement powder storage, aggregate storage, and batch operations to produce ready mix concrete. A proposed hot mix asphalt plant will be on site that is similar to the concrete plant, except the material will be heated up. An overlay of the proposed project is shown on Figure 2.

D. Climate

Runoff from the Sierra Nevada mountains to the west provides good quality water for irrigation along with local groundwater. The region around the site experiences a long growing season (April through

October), warm to hot summers, and a fall harvest period usually sparse in rain. Winters are moist and often blanketed with tule fog. The valley floor is surrounded on three sides by the Sierra Nevada Mountain Range to the east, the Coast Ranges to the west, and the Tehachapi and Transverse Ranges to the south, resulting in a comparative isolation of the valley from marine effects. Because of this and the comparatively cloudless summers, normal maximum temperature advances to a high of 101 degrees Fahrenheit during the latter part of July. Valley winter temperatures are usually mild, but during infrequent cold spells air temperature occasionally drops below freezing. Heavy frost occurs during the winter in most years, and the geographic orientation of the valley generates prevailing winds from the northwest (Water Plan, 2013).

The mean annual precipitation in the valley portion of the region ranges from about 6 to 11 inches, with 67 percent falling from December through March, and 95 percent falling from October through April. The region receives more than 70 percent of the possible amount of sunshine during all but four months, November through February. In the winter months, tule fog, which can last up to two weeks, reduces sunshine to a minimum (Water Plan, 2013).

III. GEOLOGIC CONDITIONS

A. Regional Geologic Setting

The City of Visalia and subject site are located within the Kaweah Subbasin of the Tulare Lake Hydrogeologic Region. The site is geologically located within the distal end of the coalescing alluvial fans along the east half of the valley. Over time, glaciers and streams have eroded the Sierra Nevada Mountain Range and Coast Ranges and deposited interfingering alluvial materials of clay, silt, sand, and gravel filling the present-day valley. These deposits have formed vast fluvial fans at the base of the mountain ranges that spread laterally and parallel to the mountain fronts. The major alluvial geomorphic feature is the Kaweah River Fan and the major fan to the north is the Kings River Fan emanating from the Sierra Nevada Mountain Range. On a whole, all of these fans systems have coalesced forming a large heterogenous alluvial plain, upon which the site is located.

Sediments of the fan systems have been eroded and transported toward the west from the Sierra Nevada Mountain Range. The site is underlain by fluvial sediments transported and deposited by nearby streams aggrading (building up) vertically and laterally into coalescing sequences that thin to a feather edge eastward. The feather edge of alluvium contacts the igneous and metamorphic rocks of the Sierra Nevada Mountain Range that comprise the basement; or primarily impermeable vertical boundary between the transported sediments wholly named “valley fill deposits”.

As these fans were deposited over time, soil horizons were formed during quiescent periods between erosion and deposition. Eventually these soil horizons were buried and are generally identified as oxidized deposits. The abrupt heterogenous nature of the fan deposits are overlain and underlain by unconformable contacts identified by soil horizons that form sequences, or pockets of clay, sand, silt, and gravel that are very difficult to correlate laterally and vertically.

B. Local Geologic Setting

1. Stratigraphy

The geologic map on Figure 3 shows Holocene Quaternary alluvium exposed at ground surface throughout the site area. White (2016) reported three geologic Formations beneath Visalia ranging in age from Pliocene to recent Holocene to a depth of 132-feet below land surface. From oldest to youngest, these include the Laguna Formation, Turlock Lake Formation (includes the Corcoran Clay), Riverbank Formation, and Modesto Formation. These deposits are overlain by a younger thin mantle of Holocene deposits informally named the Post Modesto I (oldest), II, III, and IV (youngest). They are generally unweathered and form thin alluvial fans that incise over the older Modesto Formation (White, 2016).

2. Surface Soil

The United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey mapping services indicates the site is underlain by Akers-Akers, saline-Sodic complex and Nord fine sandy loam. Typical profiles of the Akers-Akers complex is 60 inches and 72 inches for the Nord fine sandy loam.

The Akers-Akers, saline-Sodic complex soil is classified as prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season. The Akers is a well-drained fan remnant soil on 0-2% slopes. Maximum reported salinity of the soil is nonsaline to slightly saline. The Akers, saline-sodic is also a fan remnant soil on 0-2% slopes and is slightly saline to moderately saline. Saturated hydraulic conductivity of the Akers-Akers, saline-Sodic complex and Nord fine sandy loam ranges from 0.6 to 2.0 inches per hour. The Nord fine sandy loam is saline to very slightly saline and is located on 0 to 1% slopes. The NRCS report for the site is provided in Appendix A.

3. Depth to Bedrock

The basement rock surface beneath Visalia dips to the southwest and is an extension of the Sierra Nevada batholith. The basement complex rocks are buried beneath valley fill deposits that thicken toward the axis of the valley. More than 14,000 feet of Cretaceous, Tertiary, and Quaternary age sediments are buried beneath the Tulare Lake bed near the axial portion of the valley.

Depth to bedrock beneath Visalia was estimated by Smith (1964) to be approximately 2,000 feet beneath extensive deposits of marine and mixed marine and continental sediments that are the result of erosion from the Coast Ranges, Cascade Range, and Sierra Nevada Mountains. Continental deposits eroded from the Sierra Nevada Mountain Range and Coast Ranges have formed valley sediments that are a heterogeneous mix of gravels, sands, silts, and clays. Unconsolidated deposits overlie the marine and continental deposits and form the floor of the San Joaquin Valley (Croft, 1972).

IV. SEISMICITY

Tulare County is divided into two major physiographic and geologic provinces; the Sierra Nevada Mountains and the Central Valley. The Sierra Nevada Physiographic Province, in the eastern portion of the county, is underlain by metamorphic and igneous rock. It consists mainly of homogeneous granitic rocks, with several islands of older metamorphic rock. The central and western parts of the county are part of the Central Valley Province, underlain by marine and non-marine sedimentary rocks. The valley is a relatively flat alluvial plain with soil consisting of material deposited by uplift of the mountains. The foothill area of the county is essentially a transition zone, containing old alluvial soils that have been dissected by the west-flowing rivers and streams that carry runoff from the Sierra Nevada Mountains. The gently rolling foothills topography contains exposures of bedrock outcrops. The native mountain soils are generally quite dense and compact (General Plan, 2010).

Seismicity varies greatly between the two major geologic provinces represented in Tulare County. The Central Valley is an area of relatively low tectonic activity bordered by mountain ranges on either side. The Sierra Nevada Mountains, partially located within Tulare County, are the result of movement of tectonic plates which resulted in the formation of the mountain range. The Coast Range on the west side of the Central Valley is also a result of these forces and continued shifting tectonic activity of the Pacific and North American plates continues to elevate these ranges. Seismic hazards in Tulare County generally result from movement along faults associated with the formation of these ranges (General Plan, 2010).

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to regulate development near active faults so as to mitigate the hazard of surface fault rupture. The stated intent of the Act is to "…provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults." The Act also requires the State Geologist to compile maps delineating earthquake fault zones and to submit maps to all affected cities, counties and state agencies for review and comment. For the last 44 years, Special Publication 42 has been the vehicle by which the State Geologist, through the California Geological Survey, has informed affected agencies and the general public how and where Alquist-Priolo Earthquake Fault Zones are prepared (CGS, 2018).

The State Mining and Geology Board established Policies and Criteria in accordance with the Alquist-Priolo Fault zoning Act of 1972. They defined an "active fault" as one which has "had surface displacement within Holocene time (about the last 11,000 years). A "potentially active fault" was considered to be any fault that "showed evidence of surface displacement during Quaternary time (last 1.6 million years). Because of the large number of potentially active faults in California, the State Geologist adopted additional definitions and criteria in an effort to limit zoning to only those faults with a relatively "high" potential for surface rupture. Thus, the term "sufficiently active" was defined as a fault for which there was evidence of Holocene surface displacement. This term was used in conjunction with the term "well-defined," which relates to the ability to locate a Holocene fault as a surface or near-surface feature (Jennings and Bryant, 2010).

Another special definition of faults is used by the U.S. Bureau of Reclamation in the design of dams. According to this agency, any fault exhibiting relative displacement within the past 100,000 years is an active fault. Depending on the type of structure being planned and the acceptable risk to be taken, the definition of an active fault may be based on the last 11,000 to 100,000 years or on repeated movements during the past 500,000 years.

The term "active fault" is best avoided altogether when seismic risk is not a consideration. For simplicity, describing the characteristics of faults, such terms as "historic fault," "Holocene fault," "Quaternary fault, "pre-Quaternary fault," or "seismically active fault" are preferable (Jennings and Bryant, 2010).

A. Faults Near the Study Area

The nearest faults and fault systems were reviewed in closest proximity to the site. The California Geological Survey Fault Activity Map is viewable on the worldwide web at: maps.conservation.ca.gov/cgs/fam/ and a portion of the map is shown on Figure 4A. The map shows the locations of known faults and indicates the latest age when displacements took place, according to available data. The displacements may have been associated with earthquakes or may have been the result of gradual creep along the fault surface (CGS, 2010).

The closest Pre-Quaternary faults (older than 2.58 Ma) were identified on the Fault Activity Map of Figure 4A. According to Jennings (1985), Pre-Quaternary faults are defined as older than Quaternary (older than 2 million years) or faults without recognized Quaternary displacement. It should be noted that Quaternary faults may be young and possibly may become active. Many faults have been included with the faults designated as Pre-Quaternary because of lack of age data. Pre-Quaternary faults were identified nearest to the site and are identified on Figure 4A with an Explanation on Figure 4B.

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (A-P Act) is to address the hazard of surface fault rupture through the regulation of development in areas near Holocene-active faults and prevent the construction of structures for human occupancy across traces of active faults (California Public Resources Code (CPRC), Division 2, Chapter 7, Section 2621.5) (CGS, 2018).

For purposes of the A-P Act, active faults are defined by the State Mining and Geology Board (SMGB) as those faults that have "…had surface displacement during Holocene time…". In order to provide clarity regarding the term active fault, Special Publication 42 uses the term Holocene-active fault (11,700 years before present) to describe faults that are specifically regulated by the A-P Act. The A-P Act only addresses the hazard of surface fault rupture for Holocene-active faults. Faults that have moved prior to the Holocene, referred to as Pre-Holocene faults, may also have the potential to rupture but are not addressed by the A-P Act (CGS, 2018).

A fault may only be presumed to be inactive based on satisfactory geologic evidence; however, the evidence necessary to prove inactivity sometimes is difficult to obtain and locally may not exist.

Terms such as "potentially active" and "inactive" have been commonly used in the past to describe faults that do not meet the SMGB definition of "active fault." However, these terms have the potential to cause confusion from a regulatory perspective, as they are not defined in the A-P Act and may have other non-regulatory meanings in the scientific literature or in other regulatory environments. In order to avoid these issues, introduced below are terms that provide added precision when used in classifying faults regulated by the A-P Act. Faults are classified into three categories on the basis of the absolute age of their most recent movement (SP 42).

1) Holocene-active faults: Faults that have moved during the past 11,700 years. This age boundary is an absolute age (number of years before present) and is not a radiocarbon (^{14}C) age determination, which requires calibration in order to derive an absolute age.

2) Pre-Holocene faults: Faults that have not moved in the past 11,700 years, thus do not meet the criteria of "Holocene-active fault" as defined in the A-P Act and SMGB regulations. This class of fault may be still capable of surface rupture but is not regulated under the A-P Act. Depending on available site-specific and regional data such as proximity to other active faults, average recurrence, variability in recurrence, the timing of the most recent surface rupturing earthquake, and case studies from other surface rupturing earthquakes, the project geologist may, but is not required to, recommend setbacks. Engineered solutions can also be considered by a licensed engineer operating within his or her field of practice.

3) Age-undetermined faults: Faults where the recency of fault movement has not been determined. Faults can be "age-undetermined" if the fault in question has simply not been studied in order to determine its recency of movement. Faults can also be age-undetermined due to limitations in the ability to constrain the timing of the recency of faulting. Examples of such faults are instances where datable materials are not present in the geologic record, or where evidence of recency of movement does not exist due to stripping (either by natural or anthropogenic processes) of Holocene-age deposits. Within the framework of the A-P Act, age-undetermined faults within regulatory Earthquake Fault Zones are considered Holocene-active until proved otherwise.

1. Pre-Quaternary Faults

There are numerous Pre-Quaternary (older than 2.58 Ma) faults near the study area. These faults are recognized as having no Quaternary displacement.

i. Clovis Fault

The southern extension of the Clovis Fault is approximately 35 miles north of the site. According to the California Geological Survey, the Clovis Fault is a concealed fault trending southeast to northwest along the east side of Clovis, California.

ii. Rocky Hill Fault

The Rocky Hill fault is located east of Visalia, Exeter, and Lindsay, California. It is a concealed fault trending northwest to southeast and branches at its southern end near Exeter. The fault is located within Tulare County approximately 15 miles east of the site.

iii. Fault Group near Five Points

A series of concealed northeast trending faults are located south of the Five Points area approximately 33 miles northwest of the site.

iv. Unnamed Concealed Fault

An unnamed concealed fault is located east of Alpaugh and the northern extension is approximately 26 miles south of the site.

2. Quaternary Faults

i. Terra Bella, Poso-Pond Creek Fault, and Rag Gulch Faults

There are numerous Quaternary age faults located south of the site near Delano, California and one east of the site in Terra Bella, California. The nearest Quaternary fault in Tulare County is unnamed east of Terra Bella, California, approximately 30 miles southeast of the site. Other faults and faults systems outside the county include the Rag Gulch Group east of Delano approximately 40 miles southeast of the site and the northern extension of the concealed Quaternary Poso-Pond Creek fault located approximately 38 miles south of the site.

3. Nearest Holocene-Active Faults

The nearest Holocene-active faults are the Pond fault and Nunez fault. For reference, additional major fault zones further east and west of the site are discussed below.

i. Pond Fault

The Pond Fault is a historical fault (along which displacement has occurred within the last 200 years); the northern mapped extension is approximately 40 miles south of the site in Kern County. The fault has been identified as exhibiting fault creep; surface fault rupture resulting from fault movement that breaks the surface slowly.

Smith (1983) identified the fault within Kern County. Evidence of historic fault rupture was discovered by surface evidence by down-dropped roadways, ground cracks and sags, and repeated pipeline ruptures. Subsurface evidence was identified by a groundwater barrier offsetting stratigraphic horizons amounting to nine inches of lateral (apparent vertical) offset. Data suggests the fault may be seismically active but were not conclusive.

No epicenters with magnitudes of 4.0 or larger were discovered in the study area. The Los Angeles Department of Water and Power show six epicenters within six miles of the Pond fault with four within a zone of seismicity centered four miles south of the fault zone identified as the Poso-Pond Creek Fault. It was concluded that the Pond fault may be a broad zone of faults that apparently had a long history of movement (Smith, 1983). The fault met the criteria of "sufficiently active and well-defined" for Alquist-Priolo fault zoning.

ii. Nunez Fault

The Nunez fault is an historic fault located approximately 12 miles northwest of Coalinga, California and approximately 60 miles west of the site in Fresno County. Surface rupture occurred along several strands of this fault in June and July 1983 in association with several earthquakes of magnitude 5.2 to 6.4. The Nunez fault is a relatively minor oblique-slip fault that dips steeply eastward. Surface displacements that occurred in 1983 clearly identify traces that are active and well-defined (Hart, 1984). The fault met the criteria of "sufficiently active and well-defined" for Alquist-Priolo fault zoning.

B. Regional Seismic Framework

1. Kern Canyon Fault

Only one active fault is located within Tulare County. The Kern Canyon fault is a Holocene fault located approximately 55 miles southeast of the site. The Kern Canyon fault runs along the length of Kern Canyon in the southern Sierra Nevada Mountains approximately 55 miles east-southeast of the site. A large portion of the fault runs through the eastern portion of the County. Although the 93-mile-long fault has been considered inactive since the 1930s, recent investigations reveal that the fault has ruptured within the past few thousand years. This discovery, paired with an abundance of low magnitude earthquakes along the fault, indicates that the fault is active. The Kern Canyon fault is shown as an active fault on the California Geological Survey's 2010 Fault Activity Map of California (OES, 2018) and on Figure 4.

2. Sand Andreas Fault

San Andreas fault is the longest and most significant fault zone in California. Because of considerable historic earthquake activity, this fault has been designated as active by the State. The large fault collectively accommodates the majority of relative north-south motion between the North American and Pacific plates. The San Andreas Fault is a strike-slip fault approximately 684 miles long and is located approximately 40 miles west of the Tulare County boundary. The zone originates at the triple divide off Fort Bragg in the north and terminates near the Salton Sea in the south. It is located within multiple metropolitan areas. Major earthquakes occurred on the San Andreas Fault in 1857 (Tejon Earthquake, M7.9) and in 1906 (Great San Francisco Earthquake, M 7.8) (OES, 2018).

3. Owens Valley Fault Zone

The Owens Valley fault zone is located on the eastern base of the Sierra Nevada Mountain Range and is a complex system containing both active and potentially active faults. The right-lateral fault system passes through Lone Pine near the eastern base of the Alabama Hills and follows the floor of Owens Valley northward to the Poverty Hills where it steps three kilometers to the left and continues northwest across Crater Mountain and through Big Pine.

It is subparallel to range front faults at the eastern base of the Sierra Nevada Mountains. The Owens Valley fault zone apparently has experienced three major Holocene earthquakes (Beanland and Clark, 1982).

The zone is located within Tulare and Inyo Counties and has historically been the source of seismic activity within the County. The Owens Valley fault is the primary active fault within the zone and has a fault length of 107 kilometers (approximately 75 miles). The last major rupture was approximately M 7.4 and occurred in 1872 (OES, 2018).

4. Historic Earthquakes in Tulare County

The constant motion of the crustal plates causes stress in the brittle upper crust of the earth. These tectonic stresses build up as the rocks are gradually deformed. This rock deformation, or strain, is stored in the rocks as elastic strain energy. When the strength of the rock is exceeded, rupture occurs along a fault. The rocks on opposite sides of the fault slide past each other as the rocks spring back to a relaxed position. The strain energy is released partly as heat and partly as elastic waves called seismic waves. The propagation of these seismic waves produces the ground shaking of an earthquake (CGS, Note 31).

The California Geological Survey Historic Earthquake Online Database shows only two historic earthquakes within Tulare County. A magnitude 5.0 earthquake occurred on May 29, 1915 near Porterville, California and a magnitude 5.7 earthquake occurred on June 30, 1926 near the south central portion of the county near the Kern Canyon Fault along the boundary of Kern County and Tulare County (OES, 2018).

Two historic earthquakes have occurred within close proximity to Tulare County between 1956 and 2016. A magnitude 5.7 occurred in eastern Kern County on July 11, 1992 and a magnitude 5.6 occurred near Ridgecrest-China Lake on September 20, 1995 (OES, 2018).

C. Seismic Hazard Assessment

The strength of an earthquake's ground movement can be measured by peak ground acceleration (PGA). PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity (g) (g = 9.80 meters (3.2152 feet) per second, per second). PGA is used to project the risk of damage from future earthquakes by showing earthquake ground motions that have a specified probability (e.g., 10%, 5%, or 2%) of being exceeded in 50 years. The ground motion values are used for reference in construction design for earthquake resistance and can also be used to assess the relative hazard between sites when making economic and safety decisions (OES, 2018).

The U.S. Geological Survey (USGS) National Seismic Hazard Maps display earthquake ground motions for various probability levels across the U.S. The maps incorporate findings on earthquake ground shaking, faults, and seismicity and are currently applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. PGA data from these maps have been used to determine the areas within the County that are at risk for earthquake hazards. The Tulare County Office of Environmental Services (OES) presented PGA values in the County for the 2% probability of exceedance in 50 years. Moderate-earthquake hazard areas are defined as ground accelerations of 0.65g, 0.75g, and 0.85g, and high-earthquake hazard areas are defined as ground accelerations of 0.95g and 1.05g.

As defined in ASCE 7-10, the maximum considered earthquake geometric mean (MCE_G) peak ground acceleration adjusted for site effects (PGA_M) is used for evaluation of liquefaction, lateral spreading, seismic settlements, and other soil related issues. A design ground motion from the USGS U.S. Seismic Design Maps (Beta Version) was used to calculate the PGA_M. Default parameters were Site Class D and Risk category I, II, or III. The reference document used to calculate the PGA_M value was the 2015 NEHRP Provisions that have adopted by reference the American Structural Engineers Association (ASCE)/Structural Engineering Institute (SEI) standard *ASCE/SEI 7-10: Minimum Design Loads for New Buildings and Other Structures* as the baseline. Using a site latitude of 36.294 and longitude of -119.398, the mapped PGA for the site is 0.260g and the PGA_M is 0.349g.

Based on analysis by Tulare County OES and calculated PGA_M for the site, the area falls within the low to moderate range of the ground acceleration scale. Regions at the upper end of the scale are often near major active faults. These regions will, on average, experience stronger earthquake shaking more frequently, with intense shaking that can damage even strong, modern buildings. Thus, based on historical activity and the PGA values, all areas in the County are likely to experience low to moderate shaking from earthquakes, and may experience higher levels if an earthquake were to occur in or near the County.

Figure 5 is an earthquake shaking potential map that shows the site and relative intensity (in percent) of ground shaking in California from anticipated future earthquakes. The shaking potential is calculated as the level of ground motion that has a 2% chance of being exceeded in 50 years, which is the same as the level of ground-shaking with about a 2500-year average repeat time (CGS, 2016).

D. Landslides

The USGS defines a landslide as the downslope movement of soil, rock, and organic materials under the effects of gravity and also the landform that results from such movement (Highland and Bobrowsky, 2008). The geology of a site figures into the occurrence of landslides. Landslides can occur anywhere in the world and on slopes as gentle as 1 to 2 degrees. Landslides can occur by three major triggering mechanisms; water, seismic activity, and volcanic activity. Slope saturation by water is the primary cause of landslides. Earthquakes and seismic activity can also trigger slope movements in mountainous areas.

The site is located on relatively flat terrain at 0.1% slope and approximately 15 miles from the nearest hilly terrain to the west at the base of the Sierra Nevada Mountain Range. Seismic shaking in the Visalia area is low to moderate. There is no currently active volcanism in Tulare County. The CGS Information Warehouse Landslide Inventory Map indicates the nearest known landslides are within approximately 65 miles east and 110 miles west of the site.

E. Liquefaction

Liquefaction is a failure mechanism caused by rearrangement of water-saturated, well sorted fine grained soils caused by vibrations from earthquakes or other dynamic sources. According to USGS (https://geomaps.wr.usgs.gov/sfgeo/liquefaction/aboutliq.html), loose sand and silt that is saturated with water can behave like a liquid when shaken by an earthquake. Earthquake waves cause water pressures to increase in the sediment and the sand grains to lose contact with each other, leading the sediment to lose strength and behave like a liquid. The soil can lose its ability to support structures, flow down even very gentle slopes, and erupt to the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface; usually in uneven patterns that damage buildings, roads and pipelines (USGS, 2006).

Three factors are required for liquefaction to occur.

1. Loose, granular sediment: Typically "made" land and beach and stream deposits that are young enough (late Holocene) to be loose.
2. Saturation of the sediment by ground water (water fills the spaces between sand and silt grains).

3. Strong shaking: For example, all parts of the San Francisco Bay region have the potential to be shaken hard enough for susceptible sediment to liquefy.

Typical effects of liquefaction include the following:

A. Loss of bearing strength: The ground can liquefy and lose its ability to support structures.
B. Lateral spreading: The ground can slide down very gentle slopes or toward stream banks riding on a buried liquefied layer.
C. Sand boils: Sand-laden water can be ejected from a buried liquefied layer and erupt at the surface to form sand volcanoes; the surrounding ground often fractures and settles.
D. Flow failures: Earth moves down steep slopes with large displacement and much internal disruption of material.
E. Ground oscillation: The surface layer, riding on a buried liquefied layer, is thrown back and forth by the shaking and can be severely deformed.
F. Flotation: Light structures that are buried in the ground (like pipelines, sewers and nearly empty fuel tanks) can float to the surface when they are surrounded by liquefied soil.
G. Settlement: When liquefied ground re-consolidates following an earthquake, the ground surface may settle or subside as shaking decreases and the underlying liquefied soil becomes denser.

The process of zonation for liquefaction combines Quaternary geologic mapping, historical ground-water information and subsurface geotechnical data. The liquefaction hazard Zone of Required Investigation boundaries are based on the presence of shallow (< 40 feet depth) historic groundwater in uncompacted sands and silts deposited during the last 15,000 years and sufficiently strong levels of earthquake shaking expected during the next 50 years (Fact Sheet, 2018).

Review of well completion reports from water wells dug near the site indicates there are layers of sands throughout the area ranging from a few feet to more than 20 feet thick to 320 feet below ground surface; the maximum depth reviewed. Groundwater is estimated to be approximately 150 feet below ground surface (as discussed in Section V below) at the site and saturated soils within approximately 150-feet from ground surface are not expected to be encountered. Moreover, the CGS Earthquake Zones of Required Investigation webpage does not show any liquefaction zones within Tulare County.

V. HYDROGEOLOGY

A. Depth to Groundwater

On September 21, 2018, depth to groundwater was assessed in the three onsite wells using a Solinst Model 101 150-foot water level meter. Depth to groundwater was measured at 127.36 feet below the top of the well casing in the older unused northeast ag well. The new ag well was not accessible. The domestic well was sounded but groundwater was deeper than 150-feet; the maximum length of the water level meter line.

The Department of Water Resources (DWR) Groundwater Information Center Interactive Map Application (GICIMA) was reviewed for site specific depth to groundwater. Groundwater contours around the site from Spring 2011 through Spring 2017 were analyzed for depth to groundwater beneath the site. Figure 6 below shows the depth to groundwater beneath the site since 2011.

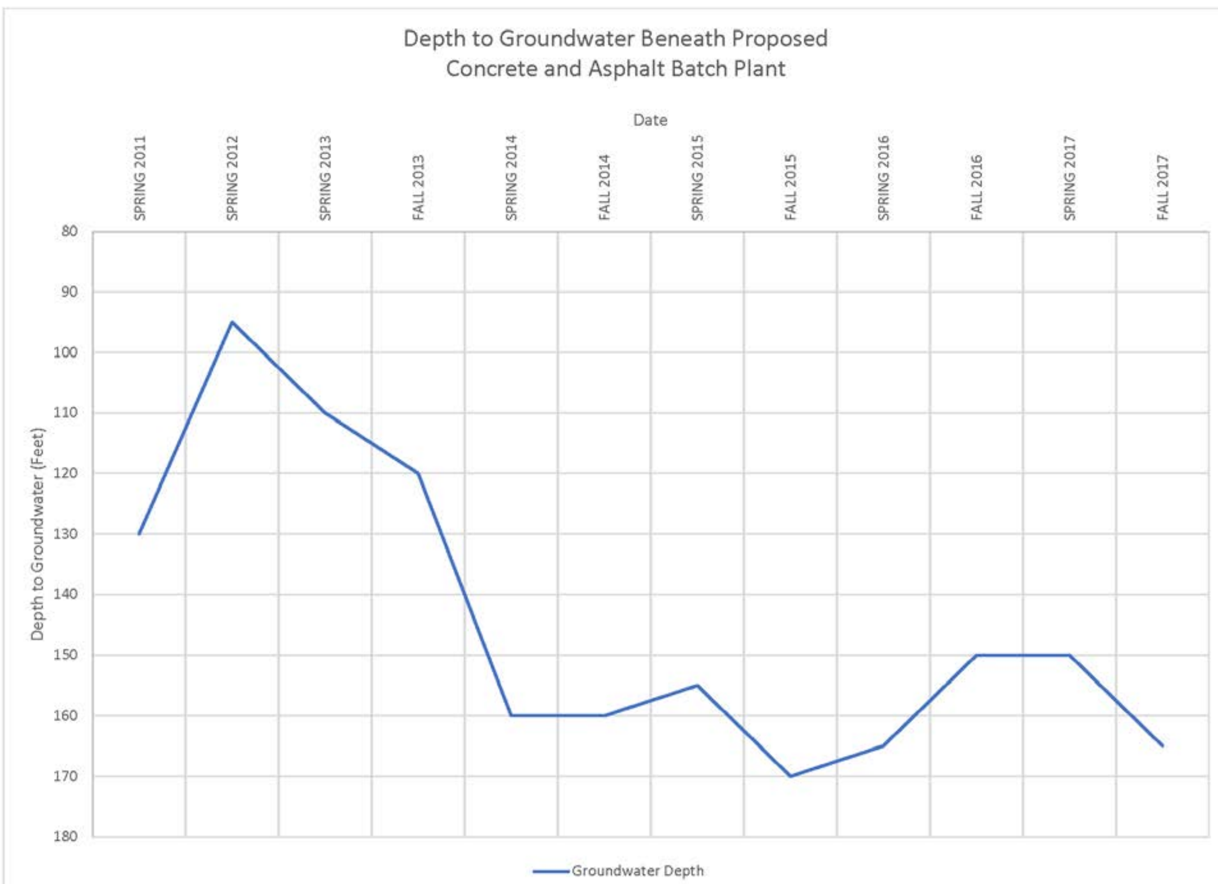

Figure 6. Depth to Groundwater Beneath the Site – Spring 2011 through Spring 2017

B. Anticipated Highest Groundwater

Based on Figure 6, the anticipated highest groundwater is approximately 95 feet below ground surface.

Site specific soil data can be used to assess the anticipated depth to groundwater by looking at textural features such as mottling and redox conditions. However, site specific subsurface soils other than NRCS data were not available for review.

C. Groundwater Flow Direction

Groundwater surface can be contoured from three or more data points using relative elevations based on a temporary benchmark or mean sea level. Semi-annual groundwater elevation data from DWR GICIMA during Spring 2011 through Fall 2017 were evaluated to assess regional groundwater flow direction. Groundwater surface contours from the DWR indicate groundwater flows primarily to the south and southwest from Spring 2011 through Fall 2017 measurements.

D. Groundwater Quality

Groundwater from site groundwater wells was not analyzed. There is one domestic water well on site within the fenced area connected to an above ground water storage tank. There are two agricultural water wells on the site located near the northeast corner of the site (Figure 2). The northernmost well is an older well and is not in use. A newer, approximately three year old well, is also located near the northeast corner of the site 160 feet south of the older agricultural well.

Data from the Geotracker Groundwater Ambient Program (GAMA) website were downloaded for review. Specifically, groundwater quality parameters of Nitrate as NO_3, Nitrate as Nitrogen, and Specific Conductance were reviewed for available groundwater beneath the site from nearby monitored wells.

Water quality parameters Nitrate as NO3, Nitrate as Nitrogen, and Specific Conductance were evaluated from two Public Water Well System Wells near the site. One well is located at the Shell gasoline station approximately 0.8 mile upgradient and east of the site and the second well is located at Sycamore Academy 1.15 miles west and downgradient of the site. Table 1 shows the sample dates and analytical results for the Shell Water Well. A graph of water quality parameter for the Shell Water Well is presented below in Figure 7.

Table 1. Groundwater Quality Parameters for the Shell Water Well located 0.8 miles east of the site.

Date Sampled	Nitrate as NO_3 (mg/L)	Nitrate as Nitrogen (mg/L)	Specific Conductance (µS/cm)
1/2/2002	2	--	--
9/27/2005	2	--	--
8/22/2006	2	--	--
3/1/2007	2.6	--	--
11/27/2007	--	--	130
4/22/2008	--	--	180
9/25/2008	2	--	--
10/14/2008	--	--	180
12/17/2008	2.3	--	--
7/28/2009	0	--	--

Date Sampled	Nitrate as NO_3 (mg/L)	Nitrate as Nitrogen (mg/L)	Specific Conductance (µS/cm)
2/2/2010	0	--	--
3/15/2011	2.3	--	--
3/16/2011	2	--	--
10/23/2012	3.2	--	--
6/25/2013	2.5	--	--
3/13/2014	2.2	--	--
5/13/2014	2.4	--	--
5/13/2014	--	--	160
5/13/2014	--	--	--
2/24/2015	2.5	--	--
12/15/2015	--	0.5	--
1/21/2016	--	0.45	--
1/30/2017	--	0.42	--
1/5/2018	--	0.46	--
3/23/2018	--	--	220
3/23/2018	--	0.57	--

Figure 7. Water quality with Nitrate as NO_3, Nitrate as Nitrogen, and Specific Conductance, Shell Water Well.

The secondary maximum contaminant level (SMCL) for specific conductance (SP) ranges from 900 to 1,600 micro Siemens per centimeter (µs/cm). According to California Code of Regulations, Title 22, Division 4, Chapter 15, Article 16, the SMCL for SP is not to be exceeded in community water systems.

According to United States Environmental Protection Agency National Primary Drinking Water Regulations, the maximum contaminant level (MCL) for Nitrate as Nitrogen is 10 mg/L. The State Water Resources Control Board MCL for Nitrate as NO3 is 45 milligrams per liter (mg/L).

The maximum value for Nitrate as NO3 was 3.2 mg/L, Nitrate as Nitrogen was 0.57 mg/L, and 220 µs/cm for specific conductance between the range of dates analyzed from November 2007 and March 2018. The measured parameters do not exceed the regulatory SMCL and MCL.

Table 2 shows the sample dates and analytical results for the Sycamore Academy Water Well.

Table 2. Groundwater Quality Parameters for the Sycamore Academy Water Well located 1.15 miles west of the site.

Date Sampled	Nitrate as NO_3 (mg/L)	Specific Conductance (µS/cm)
4/22/2004	14	--
4/22/2004	14	--
4/22/2004	--	450
4/22/2004	--	450
3/1/2005	15	--
3/1/2005	15	--
3/14/2006	22	--
3/14/2006	22	--
3/12/2007	21	--
3/12/2007	21	--
3/19/2008	22	--
3/19/2008	22	--
3/19/2008	--	610
3/19/2008	--	610
10/13/2008	--	500
10/13/2008	--	500
5/4/2009	20	--
5/4/2009	20	--
2/1/2010	21	--
2/1/2010	21	--
5/2/2011	25	--
5/2/2011	25	--
5/1/2012	0	--
5/1/2012	0	--

Date Sampled	Nitrate as NO_3 (mg/L)	Specific Conductance (µS/cm)
5/2/2013	15	--
5/2/2013	15	--
8/27/2013	31	--
8/27/2013	31	--
8/27/2013	--	490
8/27/2013	--	490
3/4/2014	32	--
3/4/2014	32	--
3/5/2015	35	--
3/5/2015	35	--
6/3/2015	35	--
6/3/2015	35	--
9/1/2015	35	--
9/1/2015	35	--
3/9/2016	--	520
3/9/2016	--	520

A graph of water quality parameters for the Sycamore Academy Water Well is presented below in Figures 8.

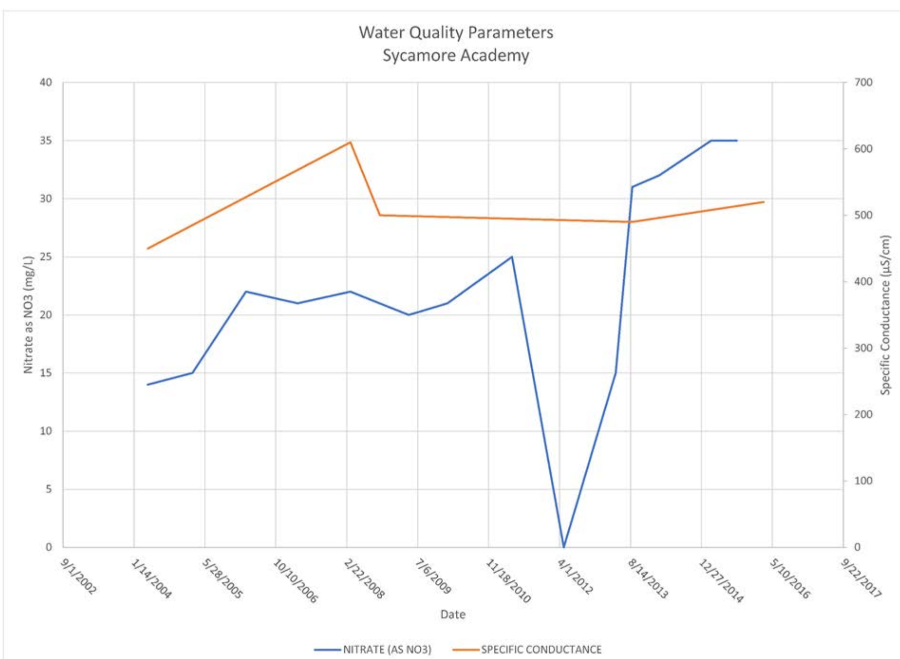

Figure 8. Water quality with Nitrate as NO3 and Specific Conductance, Sycamore Academy Water Well.

The maximum value for SP in the Sycamore Academy Water Well was 610 µs/cm between the range of dates analyzed from April 2004 and March 2016. The maximum value for Nitrate as NO_3 in the Sycamore Academy Water Well was 35 mg/L between the range of dates analyzed from April 2004 and September 2015. There was no Nitrate as Nitrogen data available for the Sycamore Academy Water Well. Water quality parameters did not exceed the SMCL or MCL.

VI. SUMMARY AND CONCLUSIONS

Based on the geology and soils study for the site, the California Environmental Quality checklist, below, was evaluated for items pertaining to geology and soils impacts with the future development.

SECTION VI. GEOLOGY AND SOILS

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

As indicated on Figure 4, no Alquist-Priolo faults cross through the site. The nearest Holocene Active faults are the Pond fault 40 miles south and Nunez fault 60 miles west of the site. The Kern Canyon fault zone to the east, San Andreas Fault zone to the west, and Owens Valley fault zone to the east are the nearest faults with potential for significant sources of ground movement. However, due to the distance from these zones, site response from movement along the fault zones is estimated to be minimal and less than significant.

ii. Strong seismic ground shaking?

The site is not located within areas of strong seismic shaking. The site does not lie within a California Geological Service *Earthquake Zone of Required Investigation*. Further, the peak ground acceleration for the site was calculated as 0.260g, which is considered relatively low. Figure 5 shows a low potential for earthquake shaking, therefore, potential for strong seismic shaking is less than significant.

iii. Seismic-related ground failure, including liquefaction?

The site is not located in an area mapped by the California Geological Survey as having liquefaction potential. One of the criteria for liquefaction is saturated soils. Groundwater was measured at 127.36-feet below ground surface, therefore, potential for liquefaction is unlikely and less than significant.

The site is not located within the vicinity of oil and gas production and local ground settlement from oil and gas production is not expected to occur.

iv. Landslides?

The site is located on relatively flat terrain at 0.1% slope and approximately 15 miles from the nearest hilly terrain to the west. The CGS Information Warehouse Landslide Inventory Map indicates the nearest known landslides are within approximately 65 miles east and 110 miles west of the site. Based on the topography of the site, gravity induced movement is unlikely therefore potential for landslides is no impact.

b) Result in substantial soil erosion or the loss of topsoil?

The site is located on relatively flat topography and there are no major waterways adjacent to the site. Surface water is utilized and included in part by local and regional drainage for agriculture managed year-round by farming operations. The NRCS soil types at the site indicate the soil is well drained with low to negligible runoff.

The Clean Water Act and associated federal regulations (Title 40 of the Code of Federal Regulations [CFR] 123.25(a)(9), 122.26(a), 122.26(b)(14)(x) and 122.26(b)(15)) require nearly all construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, including smaller sites in a larger common plan of development or sale, to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit for their stormwater discharges (EPA, 2017). In addition, the California State Water Resources Control Board adopted the new state Construction General Permit, Order Number 2009-0009-DWQ that covers any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre. The General Permit requires a Qualified SWPPP Practitioner to oversee implementation of the BMPs required to comply with the General Permit. (General Permit, 2009).

A Stormwater Pollution Prevention Plan (SWPPP) will be required for the project. The SWPPP will provide best management practices for surface water management and sediment and erosion control. Based on this information, the project is anticipated to have less than significant impacts.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

The project is located on the distal end of the Kaweah Alluvial Fan and the surface soils are listed by NRCS as fan remnant soils. The depositional environment of the alluvial and fluvial fan sediments are such that hydrocompaction is not expected to occur; especially since the site has experienced numerous years' worth of wetting and drying cycles by irrigation activities. The project will be located on regionally level topography and is not expected to contribute excessive amounts of water. The project is not expected to mine excessive amounts of groundwater. Therefore, the project is expected to have less than significant impact.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Expansive soils are not known to occur near or around the project site. The nearest region of extensive expansive soils are in the Porterville area. Expansive soils are characteristic of soils with an expansion index greater than 20, such as montmorillonite clay. Soils with an expansion index less than 20 are considered very low. According the NRCS, site soils are characterized as sandy loam and loam. These soils are considered with very low shrink-swell potential, therefore the site soils are not considered expansive and are a less than significant impact.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The site contains an existing onsite wastewater treatment system repaired in January 1978. The system contains a concrete lined four foot diameter by 30 foot deep seepage pit located approximately 200 feet from the onsite water well. The septic system was utilized for on-site use. The on-site office is currently vacant and it is unknown how long the septic system has been out of service.

Onsite wastewater systems in the area are served by private septic systems. The City of Visalia Boundary is located on the north side of Avenue 280, north of the site. There are no city sewer or stormwater conveyance structures near the site. Figure 9 shows the City of Visalia sewer and stormwater mains.

On April 5, 2018, the State Water Resources Control Board (SWRCB) approved the Local Agency Management Program (LAMP) for Tulare County. The Central Valley Regional Water Quality Control Board approved Resolution R5-2018-0009 applies to the Local Agency Management Program (LAMP) for the Tulare County Resource Management Agency and Tulare County Environmental Health Division.

The LAMP provides a new regulatory framework for the permitting of On-site Wastewater Treatment Systems (OWTS). The Tulare County Environmental Health Services Division (TCEHSD) prepared a document to advise local OWTS designers and other stakeholders of some of the major changes in the LAMP as follows (Tulare County, 2018).

The SWRCB adopted the final version of the Water Quality Control Policy for Siting, Design, Operation and Maintenance of OWTS in May 2013. Pursuant to Water Code Section 13291 (b)(3), the adopted policy describes requirements authorizing a qualified local agency to implement the adopted policy. The LAMP policies are developed by the local agencies based on local conditions. Approval of Tulare County's LAMP by the SWRCB allows the LAMP to become the standard by which the County will regulate OWTS. This approach allows for greater flexibility at the local level, rather than a "one size fits all" approach outlined by the State.

The LAMP covers the installation of new & replacement OWTS, as well as repair systems for existing OWTS. The LAMP is not intended to cover OWTS that have the following characteristics.

- Existing OWTS that are functioning normally.
- Proposed OWTS that will have design waste flow of greater than 3,500 gallons per day.
- OWTS with anticipated high amounts of fats, oils & grease (FOG), or OWTS with anticipated high values for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS).
- OWTS that will require nitrogen reduction to mitigate certain limiting conditions.
- OWTS with supplemental treatment systems

When the above listed special conditions apply to a proposed/replacement OWTS, the application for the OWTS may be referred to the SWRCB for review and/or permitting.

The current operational function of the OWTS is unknown. If the current system is functioning normally and does not meet any of the other four characteristics outlined in bullet points above, it will not be required to fall under the conditions of the Tulare County LAMP and should be allowed for use on conditions that it is fully functional and can handle design flows for proposed operations. If the on-site OWTS is not fully functional and meets any of the other four characteristics outlined in bullet points above, the system will not be covered by the Tulare County LAMP and will be referred to the SWRCB for review and/or permitting.

If a new, replacement, or repair of the existing system is proposed or required for the site, the design and construction will fall under the Tulare County LAMP regulatory standards for the installation of new & replacement OWTS, as well as repair systems for the existing OWTS.

Changes to horizontal setbacks for OWTS installations are amended as follows on Table 3.

Table 3. Minimum Required Setback Distances for OWTS

Site Feature	Septic Tank	Dispersal Field	Seepage Pit
Non-Public Water Supply Wells and Springs	100 feet	100 feet[1]	150 feet[1]
Public Water Supply Wells and Springs	100 feet[3]	150 feet[1, 2, 3, 10]	150 feet[1, 2, 3, 10]
Property line adjoining private property (with domestic well)	25 feet	50 feet	75 feet
Property line adjoining private property (with municipal water)	5 feet	5 feet	75 feet
Watercourses: -General -Between 1,200 to 2,500 feet from a Public Water System intake	100 feet[2, 10] 100 feet 100 feet	100 feet[2,10] 200 feet 400 feet	150 feet[2, 10] 200 feet 400 feet
Drainage way/swale, ephemeral streams, creeks, unlined irrigation ditch or canal, and other flowing or surface bodies of water	100 feet[4]	100 feet[4]	150 feet[4]
Lakes, ponds, stormwater/recharge basins, and other	100 feet	200 feet	200 feet
Lined ditches, lined canals, lined watertight culverts	15 feet	15 feet	15 feet
Residential on-site stormwater basins	15 feet	15 feet	15 feet
Seepage Pits[4]	5 feet	5 feet	12 feet
Dispersal field[4]	5 feet	4 feet[6]	5 feet
Cuts or steep embankments (from top of cut)	10 feet	4xh[7, 8]	4xh[7, 8]
Steep slopes (from break of slope)	10 feet	4xh[7, 8]	4xh[7, 8]
Unstable Land Mass[9]	100 feet	100 feet	100 feet

1. Drainage piping shall clear domestic water supply wells by not less than 50 feet. This distance shall be permitted to be reduced to not less than 25 feet where the drainage piping is constructed of materials approved for use within a building.
2. Where the effluent dispersal system is within 1,200 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high-water mark of the reservoir, lake of flowing water body. Where the effluent dispersal system is located more than 1,200 but less than 2,500 feet from a public water systems' surface water intake point, the dispersal system shall be no less than 200 feet from the high-water mark of the reservoir, lake, or flowing water body.
3. The horizontal separation distances are generally considered adequate where a significant layer of unsaturated, unconsolidated sediment less permeable than sand is encountered between ground surface and groundwater. These distances are based on present knowledge and past experience. Local conditions may require greater separation distances to ensure groundwater quality protection.
4. These minimum clear horizontal distances shall also apply between dispersal fields, seepage pits, and the mean high-tide line.
5. Where dispersal fields, seepage pits, or both are installed on sloping ground, the minimum horizontal distance between any part of the leaching system and ground surface shall be 15 feet.
6. Plus 2 feet for each additional 1 foot of depth in excess of 1 foot below the bottom of the drain line.
7. **h** equals the height of the cut or embankment, in feet. The required setback distance shall not be less than 25 feet nor more than 100 feet.
8. Steep slope is considered to be land with a slope of >30% and distinctly steeper (at least 20% steeper) than the slope of the adjacent tank or dispersal field area.
9. Unstable land mass or any areas subject to earth slides identified by a registered engineer or registered geologist ; other setback distance are allowed, if recommended by a geotechnical report prepared by a qualified professional.
10. Where the dispersal system is greater than 20' in depth, and less than 600' from public water supply well, then the setback must be greater than the distance for two-year travel time of microbiological contaminants, as determined by qualified professional. In no case, shall the setback be less than 200'.

Both TCEHSD and the Resource Management Agency (RMA) will continue to have similar roles in the OWTS process. TCEHSD will review OWTS design proposals and the RMA will be responsible for permit issuance and inspection.

The key difference is that a design report will now be required for all new proposed OWTS. In addition to the design report, a 'Test Hole Permit Application' & Site Evaluation Report must be submitted at the beginning of the permit process.

The Test Hole Permit Application will require two test pit analyses; one in the primary leach field area and the other in the replacement area. Test holes must be dug to a depth of at least five (5) feet deeper than proposed trench bottom depths. For seepage pits, test holes must be dug to a minimum depth of ten (10) feet deeper than the proposed pit bottom.

Where the maximum soil application rate cannot be initially determined from the soil boring/test hole analysis, percolation testing will be required, to justify an application rate for a proposed OWTS design. The average value of all percolation test results shall not exceed 200 Minutes per Inch (MPI). No single test result shall exceed 240 MPI. A minimum of 3 percolation test holes must be explored when the primary & replacement areas are near each other; 6 test holes are required when they are not.

All design reports must include a copy of recorded measurements & time intervals. Design reports that do not incorporate the County approved test form must provide equivalent percolation test information.

In addition, the following methodology must be utilized:

- Percolation test holes shall be 6 inches in diameter. Larger diameter holes may be accepted if the appropriate correction factor & gravel packing are used.
- Unless approval is obtained from the RMA, the test hole bottom depth shall be deeper than the proposed system bottom depth.
- Seepage pits – unless otherwise indicated by the RMA, there shall be a percolation test performed on every seepage pit proposed.
- Presoak requirement – test holes shall be filled with water to a minimum depth of 12 inches above the base of the hole. The presoak shall be maintained for a minimum of 4 hours for sandy soil with no clay and 24 hours for all other soils.
- Percolation tests shall be measured to the nearest 1/8 inch from a fixed point. The test shall begin within 4 hours following completion of the presoak. Adjust the water level to 6 inches (12 inches for seepage pits) over the pea gravel bottom to begin the test.
- Readings shall be taken over 30 minute intervals. Refill as necessary to maintain 6 inches of water over the pea gravel bottom at each interval. Readings shall be taken until 2 consecutive readings do not vary by more than 10 percent per reading, with a minimum of 3 readings. The last 30-minute interval is used to compute the percolation rate.
- If 4 inches or more of water seeps from the hole during the 30 minute interval, readings may be taken at 10 minute intervals. Readings shall be taken until 2 consecutive readings do not vary by more than 10 percent per reading, with a minimum of 3 readings. The last 10-minute interval is used to compute the percolation rate.

Requirements for septic tank design & construction are as follows.

- Risers/manholes are required for both compartments in septic tanks. There will be minimum compartment sizes for tanks. Inlet & outlet pipe sizing has specific requirements.

Changes for the requirements for dispersal field design are as follows.

- Distribution boxes will now be required for a leach field with multiple lines. Leach fields designs that exceed 500 total feet of leach-line will require a dosing tank.

Seepage pit design will only be permitted to serve single-family residences. Use of seepage pits in all other situations will require permitting approval with the Regional Water Quality Control Board (RWQCB). The diameter of pits may be between 3 to 5 feet in width. The minimum sidewall amount below the inlet shall be 10 feet.

Requirements for the format for a septic design report have changed and are included in the guidance document for the required elements in a septic design report. Changes to the processing and review fees for design reports will include a fee schedule to address the changes.

Septic design reports must be submitted by 'Qualified Professionals' that are those persons with the following credentials/licensure.

- RMA Building Inspectors demonstrating knowledge of OWTS
- California Professional Engineer
- California Engineering Geologist
- California Professional Hydrogeologist
- Registered Environmental Health Specialist (REHS)
- Soil Science of America Certified Soil Scientists

Parcel density will be limited to one system per acre. Land development proposals that will cause an exceedance of this ratio will likely require cumulative impact studies. These studies may include nitrogen-loading analysis and groundwater mounding evaluation.

There is an existing septic tank and seepage pit located at the site. If the system is fully functional and meets the design requirements for the proposed facility, it is anticipated that the proposed project would not require a new OWTS to address the sewage needs of the proposed project.

The installation of a septic tank is regulated and monitored by the TCEHSD and RMA. Upon submission of an application to install a new septic system, TCEHSD requires that the above newly implemented LAMP procedures be followed for an on-site OWTS. According to the site owner, the currently permitted OWTS is functioning and is expected to be utilized for the proposed operations. If the on-site system is fully functional, meets the design requirements for the proposed project, and complies with TCEHSD regulations/permit requirements through design features and Mitigation Measures, Less Than Significant project-specific impacts are expected to occur.

VII. LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of the responsible party and involved regulatory agencies, unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk and such parties have a duty to determine its adequacy for their intended use, time, and location.

The purpose of this study is to reasonably characterize existing geologic and/or hydrogeologic site conditions. No investigation can be thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed. Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work is performed, our professional opinions are based in part on interpretation of data from discrete locations that may not represent actual conditions at other locations.

No assessment can eliminate uncertainty. This report was intended to reduce, but not eliminate this uncertainty, recognizing reasonable limits of time and cost. Subsurface variations cannot be known, nor entirely accounted for in spite of exhaustive testing. This report should not be regarded as a guarantee that no further recognized geological/hydrogeological conditions are present on or beneath the site beyond that which could have been detected within the scope of work.

The findings, conclusions, and recommendations rendered in this report are solely professional opinions based on information obtained during the assessment. Changes in existing conditions at the site due to time lapse, natural causes, or operations on adjoining properties may deem the conclusions and recommendations inappropriate. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services.

MGS does not warrant the accuracy of work performed or information supplied by others including any of its subcontractors or any segregated portions of this report. In performing our professional services, we have attempted to apply present engineering and scientific judgment and use a level of effort consistent with the standard of practice measured on the date of work and in the locale of the project site for similar type studies.

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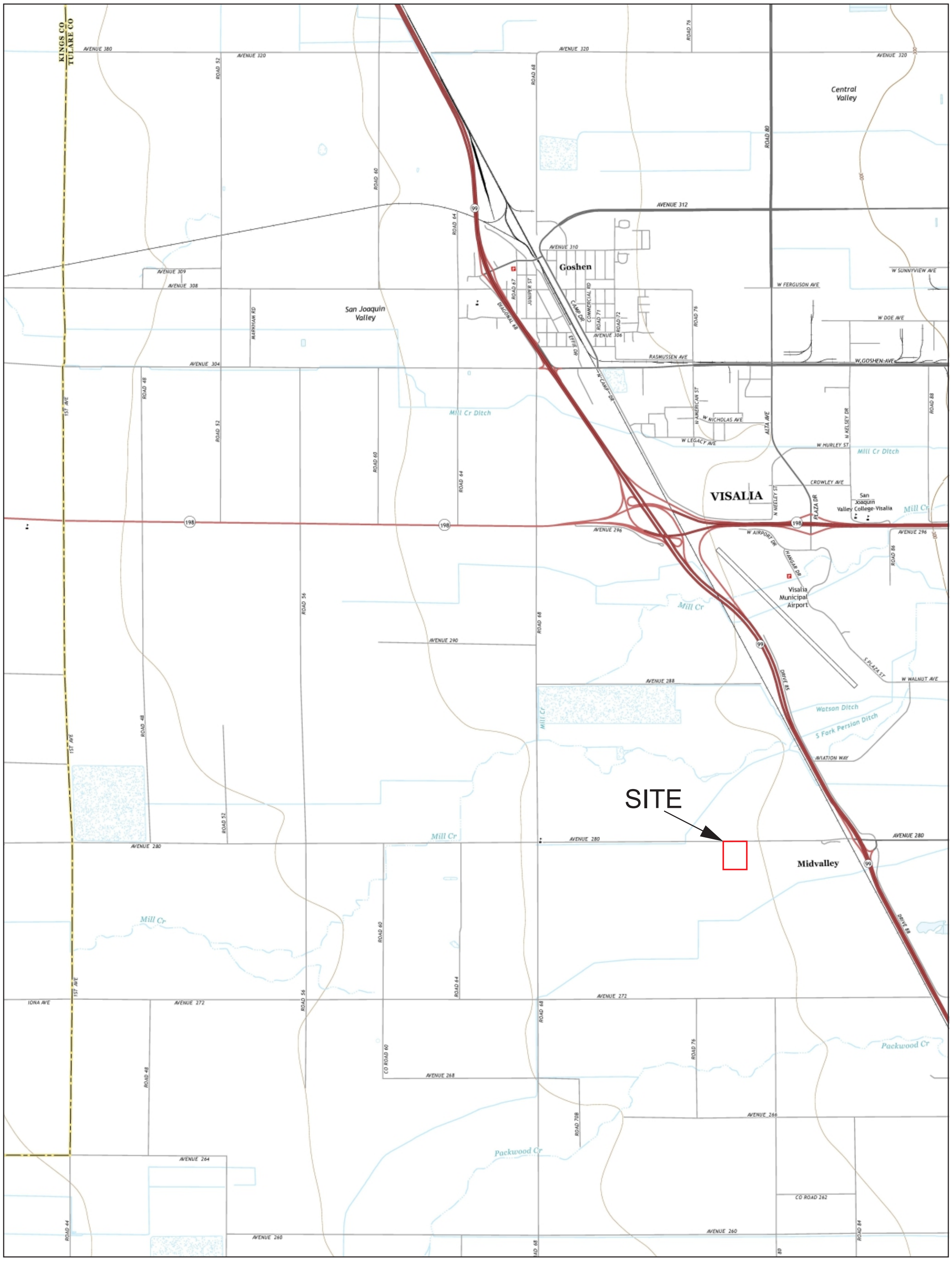
FIGURES



CONTOUR INTERVAL = 10 FEET

0' 5,280'

1 INCH = 1 MILE

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PROJECT:
GEOLOGY AND SOILS REPORT

VICINITY MAP

PLOT DATE: 08/05/2018

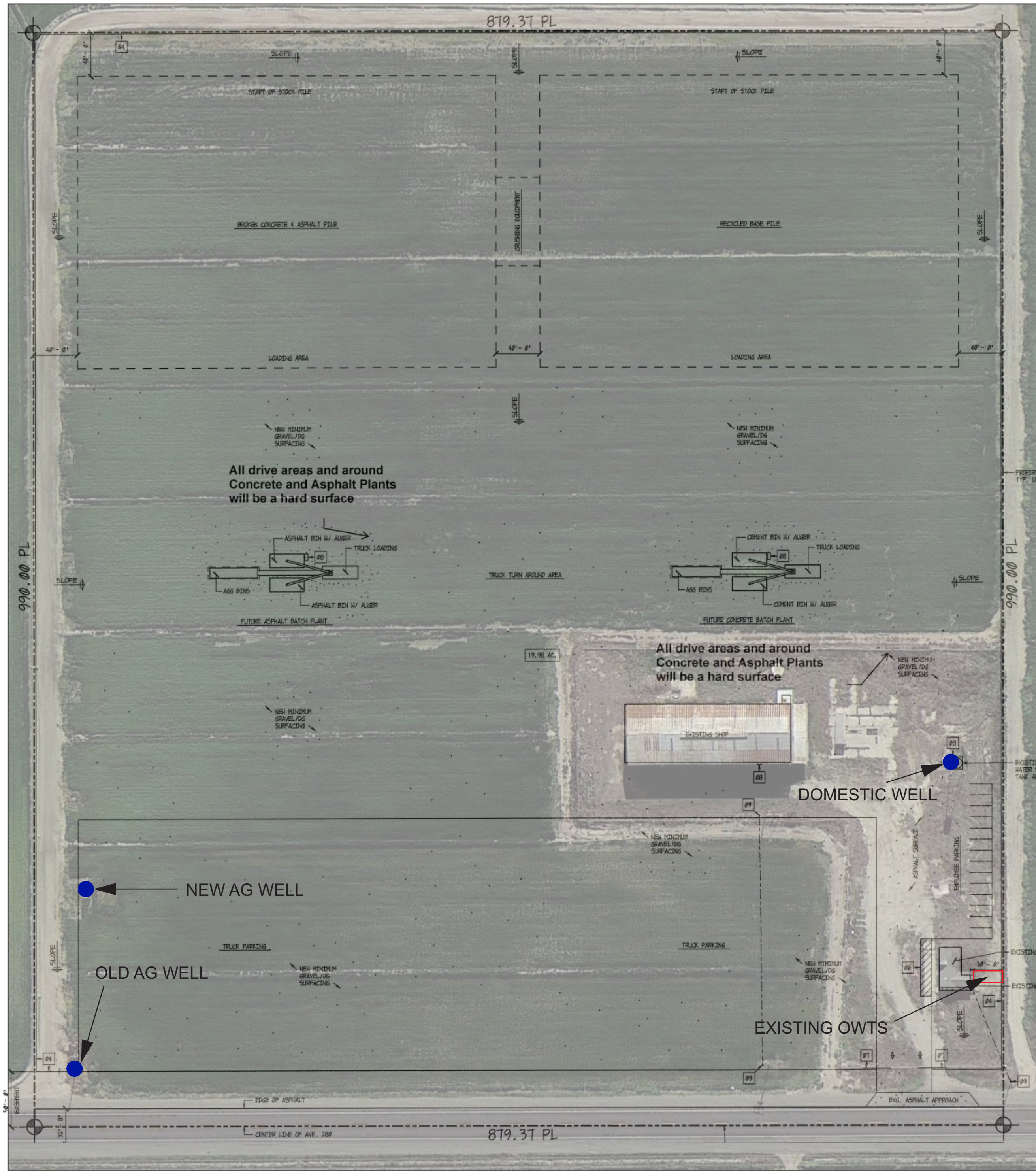
PROJECT NO: 18021

CLIENT:
DUNN'S CONSTRUCTION, INC.
15602 AVENUE 196
VISALIA, CA 93292

REVISION LOG:

SCALE: AS SHOWN

SHEET NO.: FIGURE 1



0' 140'
1 INCH = 140 FEET
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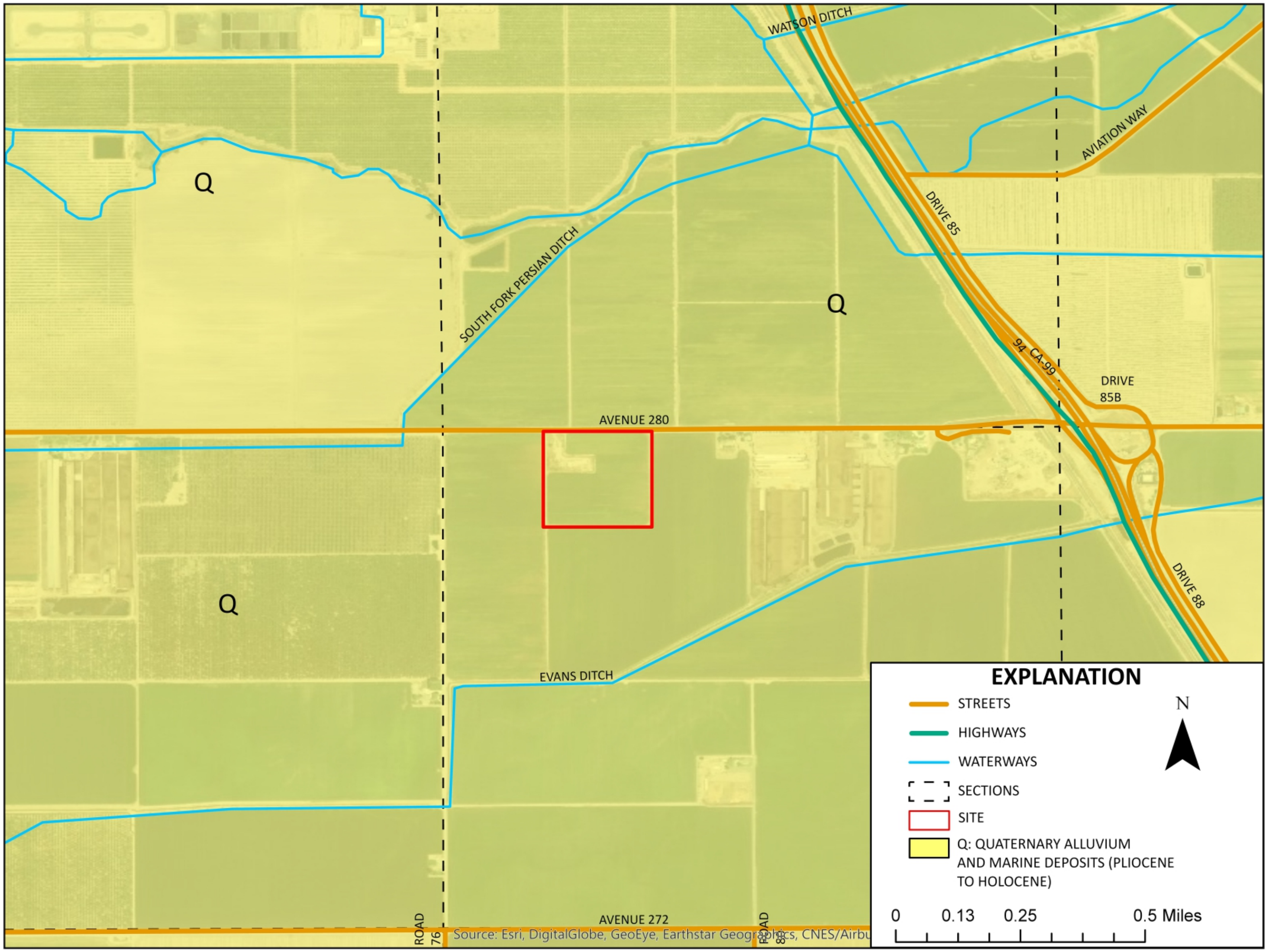
		CLIENT: DUNN'S CONSTRUCTION, INC. 15602 AVENUE 196 VISALIA, CA 93292	REVISION LOG:	SCALE: AS SHOWN SHEET NO.: FIGURE 2



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GEOLOGIC MAP

REVISION LOG:

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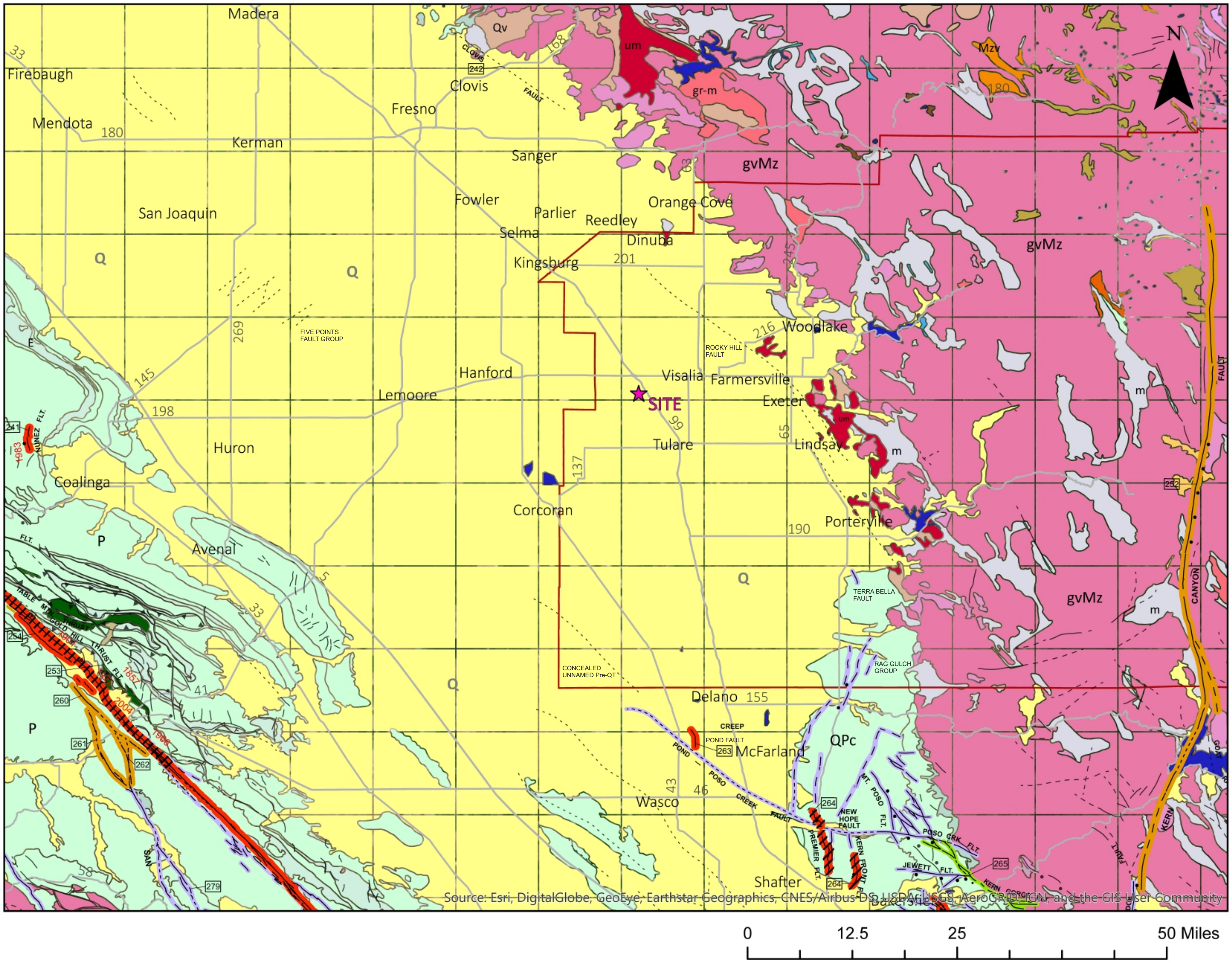
PROJECT NO: 18021

SCALE: AS SHOWN

SHEET NO.: FIGURE 3



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FAULT MAP

REVISION LOG:

PLOT DATE: 08/27/2018

PROJECT NO: 18021

SCALE: AS SHOWN

SHEET NO.: FIGURE 4A

EXPLANATION

SITE

COUNTY BOUNDARY

STATE HIGHWAYS

FAULT AGE

HISTORIC

HOLOCENE

LATE QUATERNARY

QUATERNARY

FAULT CREEP

PRE-QUATERNARY FAULTS

FAULT, CERTAIN

FAULT, APPROX. LOCATED

FAULT, CONCEALED

THRUST FAULT, CERTAIN

THRUST FAULT, APPROX. LOCATED

THRUST FAULT, CONCEALED

FAULT, CERTAIN (BALL AND BAR)

FAULT, APPROX. LOCATED (BALL AND BAR)

FAULT, CONCEALED (BALL AND BAR)

QUATERNARY FAULTS

FAULT, APPROX. LOCATED

FAULT, CERTAIN

FAULT, CONCEALED

THRUST FAULT, CERTAIN

THRUST FAULT, APPROX. LOCATED

THRUST FAULT, CONCEALED

DEXTRAL FAULT, CERTAIN

DEXTRAL FAULT, APPROX. LOCATED

DEXTRAL FAULT, CONCEALED

SINISTRAL FAULT, CERTAIN

SINISTRAL FAULT, APPROX. LOCATED

SINISTRAL FAULT, CONCEALED

THRUST FAULT, CERTAIN (2)

THRUST FAULT, APPROX. LOCATED (2)

THRUST FAULT, CONCEALED (2)

FAULT, CERTAIN (BALL AND BAR)

FAULT, APPROX. LOCATED (BALL AND BAR)

FAULT, CONCEALED (BALL AND BAR)

DEXTRAL FAULT, CERTAIN (BALL AND BAR)

FAULT,CERTAIN (DIP)

FAULT, APPROX. LOCATED (DIP)

FAULT, CONCEALED (DIP)

REVERSE FAULT, CERTAIN

REVERSE FAULT, APPROX. LOCATED

REVERSE FAULT, CONCEALED

GEOLOGIC ROCK TYPES OF CA

E: EOCENE MARINE ROCKS (PALEOCENE TO OLIGOCENE)

Ec: EOCENE NONMARINE ROCKS (EOCENE)

Ep: PALEOCENE MARINE ROCKS (PALEOCENE)

KJf: FRANCISCAN COMPLEX (JURASSIC TO CRETACEOUS)

KJfm: FRANCISCAN MELANGE (JURASSIC TO CRETACEOUS)

Kl: LOWER CRETACEOUS MARINE ROCKS (EARLY CRETACEOUS)

KU: UPPER CRETACEOUS MARINE ROCKS (LATE CRETACEOUS)

M: MIOCENE MARINE ROCKS (OLIGOCENE TO PLIOCENE)

Mc: MIOCENE NONMARINE ROCKS (OLIGOCENE TO PLEISTOCENE)

Mzv: MESOZOIC VOLCANIC ROCKS (JURASSIC TO CRETACEOUS)

Mzv: MESOZOIC VOLCANIC ROCKS (TRIASSIC TO CRETACEOUS)

O: OLIGOCENE MARINE ROCKS (EOCENE TO MIOCENE)

Oc: OLIGOCENE NONMARINE ROCKS, (MIDDLE EOCENE TO EARLY MIOCENE)

P: PLIOCENE MARINE ROCKS (MIOCENE TO PLEISTOCENE)

Pz: PALEOZOIC MARINE ROCKS (LATE PROTEROZOIC(?) TO MESOZOIC(?))

Q: QUATERNARY ALLUVIUM AND MARINE DEPOSITS (PLIOCENE TO HOLOCENE)

QPc: PLIO-PLEISTOCENE AND PLIOCENE LOOSELY CONSOLIDATED DEPOSITS (MIOCENE TO PLEISTOCENE)

Qg: QUATERNARY GLACIAL DEPOSITS (PLEISTOCENE)

Qls: QUATERNARY LARGE LANDSLIDE DEPOSITS (QUATERNARY)

Qv: QUATERNARY VOLCANIC FLOW ROCKS (QUATERNARY)

Tc: TERTIARY NONMARINE ROCKS (PALEOCENE TO PLIOCENE)

Tr: TRIASSIC MARINE ROCKS (LATE TRIASSIC TO EARLY JURASSIC)

Tv: TERTIARY VOLCANIC FLOW ROCKS (TERTIARY (4-22 MA))

Tv: TERTIARY VOLCANIC FLOW ROCKS (TERTIARY (3-4 MA))

TV: TERTIARY VOLCANIC FLOW ROCKS (TERTIARY (14-18 MA))

gb: MESOZOIC GABBROIC ROCKS (TRIASSIC TO CRETACEOUS)

gr-m: PRE-CENOZOIC GRANITIC AND METAMORPHIC ROCKS UNDIVIDED (EARLY PROTEROZOIC TO LATE CRETACEOUS)

grMz: MESOZOIC GRANITIC ROCKS (EARLY TO LATE CRETACEOUS)

grMz: MESOZOIC GRANITIC ROCKS (PERMIAN TO TERTIARY; MOST MESOZOIC)

ls: LIMESTONE OF PROBABLE PALEOZOIC OR MESOZOIC AGE

m: PRE-CENOZOIC METASEDIMENTARY AND METAVOLCANIC ROCKS UNDIVIDED (EARLY PROTEROZOIC TO CRETACEOUS)

mv: UNDIVIDED PRE-CENOZOIC METAVOLCANIC ROCKS (ORDOVICIAN(?) TO PERMIAN(?))

mv: UNDIVIDED PRE-CENOZOIC METAVOLCANIC ROCKS (UNDIVIDED) (PALEOZOIC(?) TO MESOZOIC(?))

um: ULTRAMAFIC ROCKS, CHIEFLY MESOZOIC (LATE PROTEROZOIC(?) TO EARLY JURASSIC)

um: ULTRAMAFIC ROCKS, CHIEFLY MESOZOIC (MIDDLE TO LATE JURASSIC)

WATER (HOLOCENE)

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VISALIA, CA 93292

FAULT MAP EXPLANATION

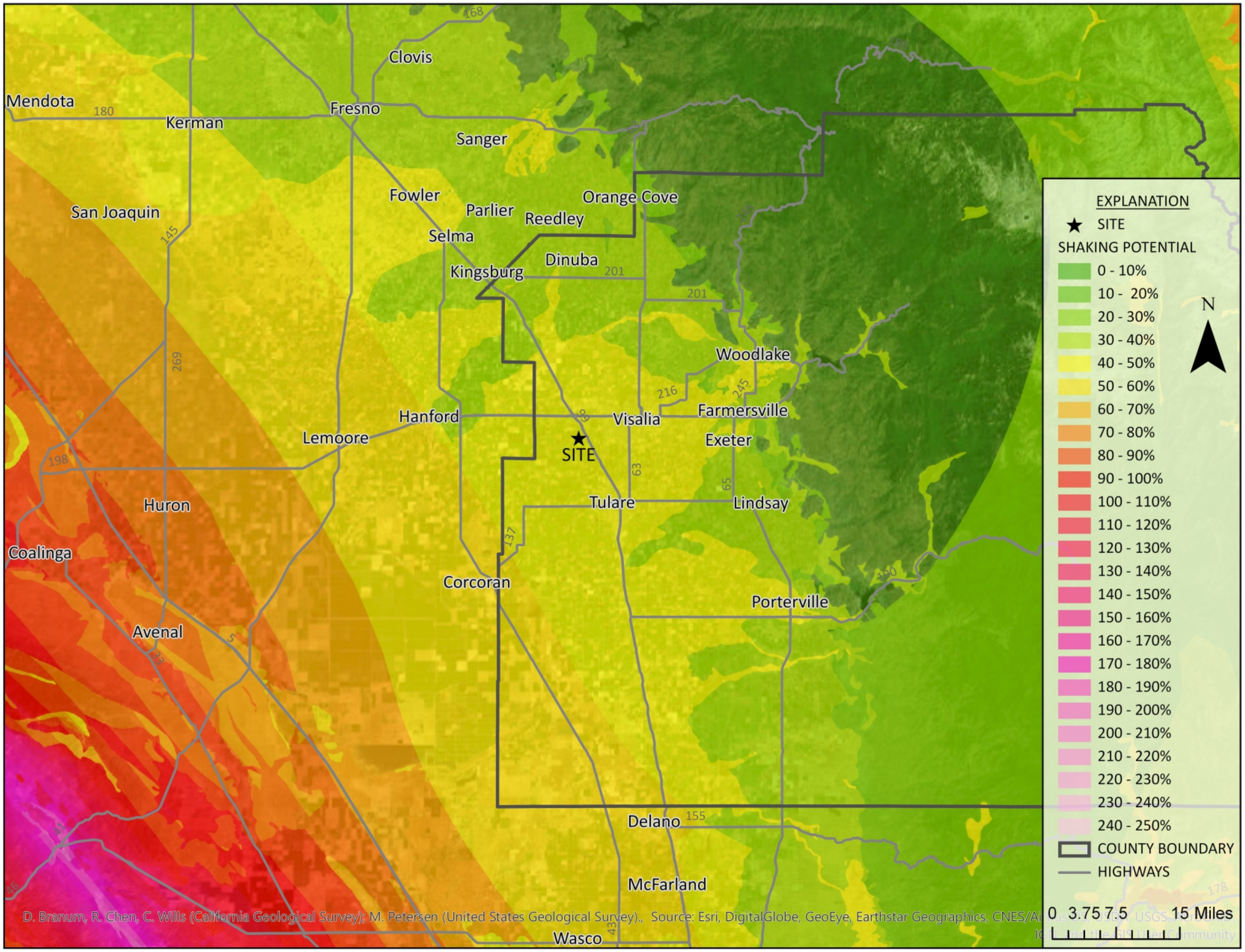
REVISION LOG:

PLOT DATE: 08/27/2018

PROJECT NO: 18021

SCALE: AS SHOWN

SHEET NO.: FIGURE 4B



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CLIENT:

DUNN'S CONSTRUCTION, INC.
15602 AVENUE 196
VISALIA, CA 93292

EARTHQUAKE SHAKING POTENTIAL MAP

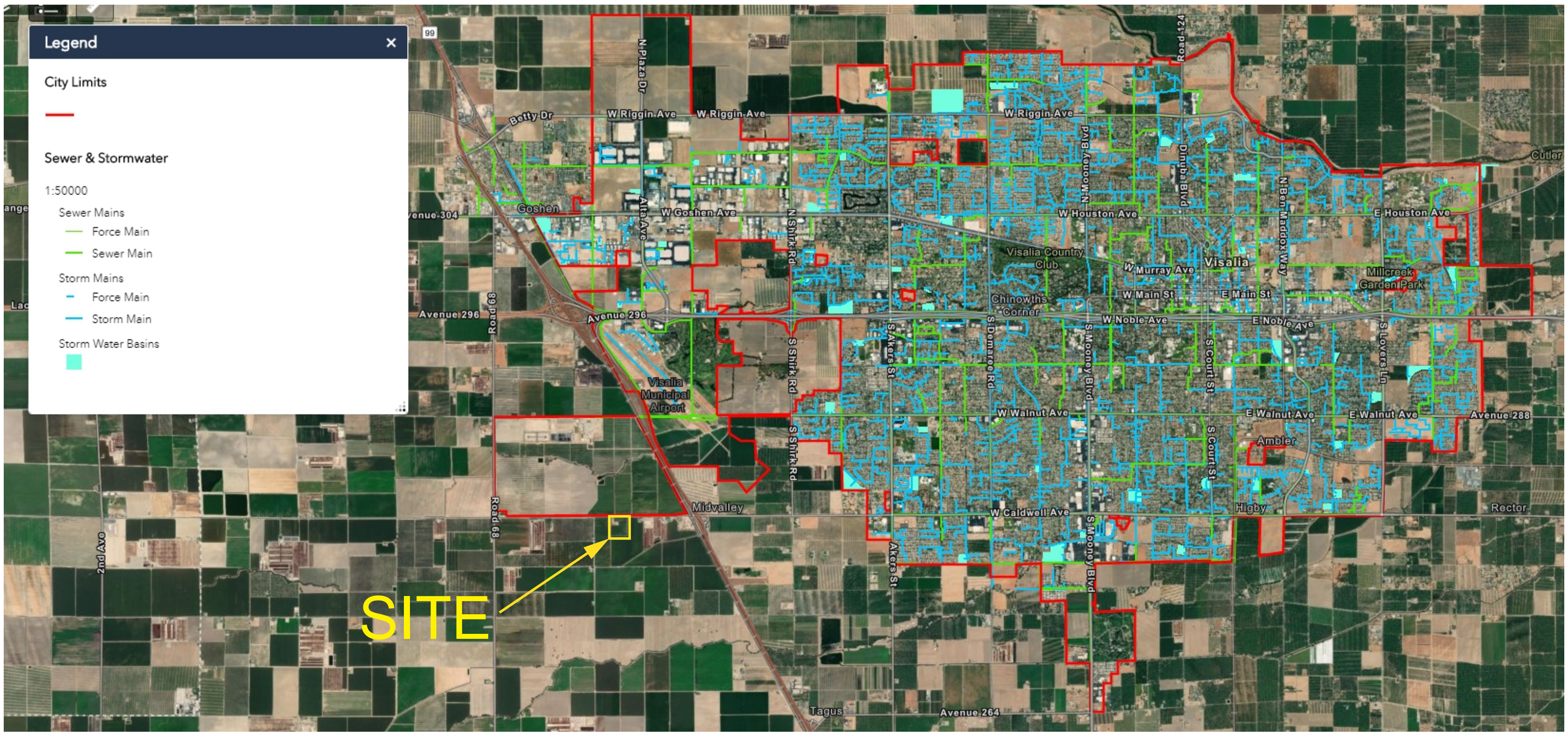
REVISION LOG:

PLOT DATE: 08/27/2018

PROJECT NO: 18021

SCALE: AS SHOWN

SHEET NO.: FIGURE 5



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PROJECT:

GEO/HYDRO OWTS REPORT

CLIENT:

DUNN'S CONSTRUCTION
15602 AVENUE 196
VISALIA, CA 93292

SEWER AND STORMWATER MAP

REVISION LOG:

PLOT DATE: 08/05/2018

PROJECT NO: 18021

SCALE: AS SHOWN

SHEET NO.: FIGURE 6

DRAWINGS NOT TO SCALE

APPENDIX A

Natural Resources Conservation Service
Custom Soil Resource Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Tulare County, Western Part, California

Dunn's Construction

August 20, 2018

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:6,180 if printed on A landscape (11" x 8.5") sheet.

Meters: 0, 50, 100, 200, 300

Feet: 0, 300, 600, 1200, 1800

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 11, Sep 8, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 20, 2014—Sep 22, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes	95.9	59.7%
130	Nord fine sandy loam, 0 to 2 percent slopes	46.8	29.2%
137	Tagus loam, 0 to 2 percent slopes	17.9	11.1%
Totals for Area of Interest		**160.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, Western Part, California

101—Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp6z
Elevation: 230 to 350 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 225 to 300 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Akers and similar soils: 60 percent
Akers, saline-sodic, and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Akers

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 16 inches: fine sandy loam
Bk - 16 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Akers, Saline-sodic

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 15 inches: fine sandy loam
Bk - 15 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 30.0
Available water storage in profile: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Tujunga

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: No

Colpien

Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

Yettem

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Tagus

Percent of map unit: 2 percent
Landform: Fan remnants

Hydric soil rating: No

Grangeville

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Hanford

Percent of map unit: 2 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

130—Nord fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp51
Elevation: 190 to 520 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Nord and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nord

Setting

Landform: Flood plains, alluvial fans
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Alluvium derived from mixed

Typical profile

Ap - 0 to 11 inches: fine sandy loam
C1 - 11 to 38 inches: stratified sandy loam to loam
C2 - 38 to 50 inches: stratified loamy coarse sand to coarse sandy loam
2Btb - 50 to 72 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: About 50 inches to abrupt textural change; About 38 inches to abrupt textural change
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 4 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 10.0
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Grangeville, saline-sodic
Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: Yes

Hanford
Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Tujunga
Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: No

Tagus
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Akers
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Colpien
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

137—Tagus loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp58
Elevation: 230 to 400 feet
Mean annual precipitation: 9 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Tagus and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tagus

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 17 inches: loam
Bk1 - 17 to 40 inches: loam
Bk2 - 40 to 63 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 12.0
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Tujunga
Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: No

Hanford
Percent of map unit: 5 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Grangeville
Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Hydric soil rating: No

Colpien
Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

Conservation Planning

This report provides those soil attributes for the conservation plan for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. It provides the soil description along with the slope, runoff, T Factor, WEI, WEG, Erosion class, Drainage class, Land Capability Classification, and the engineering Hydrologic Group and the erosion factors Kf, the representative percentage of fragments, sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic surface layer. Further information on these factors can be found in the National Soil Survey Handbook section 618 found at the url http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054223#00 .

Soil properties and interpretations for conservation planning. The surface mineral horizon properties are displayed. Organic surface horizons are not displayed.

Conservation Planning–Tulare County, Western Part, California																		
Map symbol and soil name	Pct. of map unit	Slope RV	USLE Slope Length ft.	Runoff	T Fact or	WEI	WEG	Erosion	Drainage	NIRR LCC	Hydro logic Group	Surface						
												Depths in.	Kf Fact or	Frag- ments RV	Sand RV	Silt RV	Clay RV
101—Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes																	
Akers	60	1.0	498	Negligible	5	86	3	—	Well drained	4c	B	0 - 16	.28	—	70	16	13
Akers, saline-sodic	25	1.0	498	Negligible	5	86	3	—	Well drained	4s	C	0 - 14	.32	—	70	16	13
130—Nord fine sandy loam, 0 to 2 percent slopes																	
Nord	85	1.0	498	Negligible	5	86	3	—	Well drained	4c	B	0 - 11	.24	—	69	16	14
137—Tagus loam, 0 to 2 percent slopes																	
Tagus	85	1.0	498	Low	5	56	5	—	Well drained	4c	B	0 - 16	.37	—	44	41	14

Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Tulare County, Western Part, California			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
101—Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes			
Akers	60	Negligible	B
Akers, saline-sodic	25	Negligible	C
130—Nord fine sandy loam, 0 to 2 percent slopes			
Nord	85	Negligible	B
137—Tagus loam, 0 to 2 percent slopes			
Tagus	85	Low	B

Water Features

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

Water table refers to a saturated zone in the soil. The water features table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. The kind of water table, apparent or perched, is given if a seasonal high water table exists in the soil. A water table is perched if free water is restricted from moving downward in the soil by a restrictive feature, in most cases a hardpan; there is a dry layer of soil underneath a wet layer. A water table is apparent if free water is present in all horizons from its upper boundary to below 2 meters or to the depth of observation. The water table kind listed is for the first major component in the map unit.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*		*Ft*				
101—Akers-Akers, saline-Sodic, complex, 0 to 2 percent slopes											
Akers	B	Negligible	Jan-Dec	—	—	—	—	—	None	Brief (2 to 7 days)	Very rare
Akers, saline-sodic	C	Negligible	Jan-Dec	—	—	—	—	—	None	Brief (2 to 7 days)	Very rare
130—Nord fine sandy loam, 0 to 2 percent slopes											
Nord	B	Negligible	Jan-Dec	—	—	—	—	—	None	Brief (2 to 7 days)	Very rare
137—Tagus loam, 0 to 2 percent slopes											
Tagus	B	Low	Jan-Dec	—	—	—	—	—	None	Brief (2 to 7 days)	Very rare

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APPENDIX E

HYDROLOGY AND WATER QUALITY REPORT

HYDROLOGY AND WATER QUALITY REPORT FOR PROPOSED CONCRETE AND ASPHALT BATCH PLANT

PREPARED FOR:

DUNN'S CONSTRUCTION, INC.
15602 AVENUE 196
VISALIA, TULARE COUNTY, CALIFORNIA 93292
APN 119-010-039

PREPARED BY:

MASON GEOSCIENCE
PO BOX 1020
EXETER, CA 93221

SEPTEMBER 27, 2018

SUBMITTED TO:
4CREEKS, INC.
324 SOUTH SANTA FE STREET, SUITE A
VISALIA, CALIFORNIA 93292

MASON GEOSCIENCE

September 27, 2018

To:
Mr. Richard Walker
Senior Planner/Senior Project Manager
4Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, CA 93292

From:
Fred Mason
Professional Geologist
Mason Geoscience
PO Box 102
Exeter, CA 93221

SUBJECT: HYDROLOGY AND WATER QUALITY REPORT FOR PROPOSED CONCRETE AND ASPHALT BATCH PLANT, DUNN'S CONSTRUCTION, 7763 AVENUE 280, APN# 119-010-039, VISALIA, TULARE COUNTY, CALIFORNIA.

Dear Mr. Walker:

The attached report has been prepared to assess the hydrology and water quality impacts to the site from the proposed project. The report includes discussion of the natural setting of the site and California Environmental Quality Act (CEQA) checklist is included with discussion regarding potential environmental impacts from the proposed project. The environmental impacts with regard to CEQA include thresholds of significance as identified in the CEQA checklist and are discussed herein. If you have any questions or concerns, please contact me at (559) 936-3695.

Respectfully submitted,

Fred Mason, PG, CEG, CHG
Principal Geologist

PROFESSIONAL GEOLOGIST
FREDERICK A. MASON
No. 8442
Exp. 10/19
STATE OF CALIFORNIA
9/27/18

CERTIFIED HYDROGEOLOGIST
FREDERICK A. MASON
No. 996
Exp. 10/19
STATE OF CALIFORNIA
9/27/18

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FIGURES

I. INTRODUCTION

Dunn's Construction, Inc. is proposing to build a concrete and asphalt batch plant on a 19.98 acre site in Visalia, California (Figures 1 and 2). The site currently contains an approximate 9,000 square foot shop and approximate 900 square foot residence that appears to have been converted to an office. The office septic system is constructed with a dual chamber septic tank that is four feet wide by nine feet long by four feet deep and approximately 1,000 gallon volume. Effluent from the septic tank is leached into a four foot diameter by 30 foot deep concrete lined seepage pit.

Dunn's Construction is proposing a concrete mixing plant, cement powder storage, aggregate storage, and batch operations to produce ready mix concrete. Cement and fly ash will be stored in silos approximately 40 feet tall. The aggregate will be pushed into piles approximately 15 feet tall as trucks bring material in. It is estimated that the project will produce approximately 100,000 cubic yards of concrete per year resulting in approximately 200 loads of concrete going out per week and 110 loads of aggregate and 20 loads of cement coming in per week.

A portable concrete and asphalt recycling plant will be onsite a couple times per year depending on the stockpile of materials available. The project will accept broken concrete and asphalt brought in by contractors to be stockpiled approximately 15 feet high. Once there is enough rubble, a portable crushing plant will take the rubble and mix it into road base. It is estimated that approximately 30,000 tons of base rock will be produced per year resulting in approximately 30 loads of rubble coming in per week and 25 loads of base going out per week, on average.

A proposed hot mix asphalt plant will be similar to the concrete plant except the material will be heated. The aggregate will be brought in and dumped into stockpiles approximately 15 feet high until used in the plant. The asphalt plant will receive oil to be stored in containers and heated with propane. The oil and aggregate will be mixed together and stored in a silo approximately 40 feet tall until shipped out. It is estimated that approximately 125,000 tons will be produced per year resulting in approximately 100 loads of aggregate coming in per week, seven loads of oil coming in per week, five loads of propane coming in per week, and approximately 100 loads of asphalt going out per week.

Site details are as follows:

Current Facility Name:------------------	Dunn's Construction, Inc.
Address:------------------------------------	7763 Avenue 280, Visalia, California
County:-------------------------------------	Tulare County
Assessor's Parcel Numbers------------	119-010-039
Township, Range, Section: ------------	Township 19 South, Range 24 East, Section 8
Baseline Meridian:----------------------	Mount Diablo Baseline and Meridian
Owner: ------------------------------------	Mark Dunn Dunn's Construction, Inc. 15602 Ave 196, Visalia, California, 93292 (559) 734-5373

A. Purpose and Scope

This report has been prepared to assess potential hydrologic and water quality impacts to the site including information for an on-site wastewater treatment system (OWTS).

The assessment required reviewing hydrologic and water quality information for the site and surrounding area and includes qualitative and quantitative hydrologic data. These data, submitted herein, include discussion of the natural setting of the site. A California Environmental Quality Act (CEQA) checklist is included with discussion regarding potential environmental impacts from the proposed project. The environmental impacts with regard to CEQA include thresholds of significance as identified in the CEQA checklist and relate to the following criteria.

Would the project:

- Violate any water quality standards or waste discharge requirements?
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- Otherwise substantially degrade water quality?
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows?
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
- Inundation by seiche, tsunami, or mudflow?

B. Regulatory Requirements

1. California Environmental Quality Act (CEQA) Requirements

This section addresses potential impacts to Hydrology and Water Quality. As required in Section 15126, all phases of the proposed Project will be considered when evaluating its environmental impact.

As noted in 15126.2 (a): An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area, as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas." (CEQA, 2018).

The regulatory setting provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County 2030 General Plan, Tulare County General Plan Background Report and/or Tulare County General Plan Revised DEIR incorporated by reference and summarized below. The hydrologic conditions provides a description of the Hydrology and Water Quality in the County.

2. Federal Agencies & Regulations

i. Clean Water Act/NPDES

The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. Growing public awareness and concern for controlling water pollution led to sweeping amendments in 1972. As amended in 1972, the law became commonly known as the Clean Water Act (CWA). Under the CWA, the Environmental Protection Agency (EPA) has implemented pollution control programs such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters.

The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters (CWA, 2018).

ii. National Flood Insurance Program

The National Flood Insurance Program (NFIP) was created as a result of the passage of the National Flood Insurance Act of 1968. Congress enacted the NFIP primarily in response to the lack of availability of private insurance and continued increases in federal disaster assistance due to floods. At the time, flooding was viewed as an uninsurable risk and coverage was virtually unavailable from private insurance markets following frequent widespread flooding along the Mississippi River in the early 1960s. The NFIP is a Federal program, managed by the Federal Emergency Management Administration (FEMA), and has three components: to provide flood insurance, to improve floodplain management, and to develop maps of flood hazard zones (NAIC, 2018).

iii. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and groundwater wells. SDWA does not regulate private wells which serve fewer than 25 individuals. SDWA authorizes the United States Environmental Protection Agency to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. EPA, states, and water systems then work together to make sure that these standards are met (US EPA, 2004).

iv. Environmental Protection Agency

The mission of EPA is to protect human health and the environment. EPA works is to ensure that:

- All Americans are protected from significant risks to human health and the environment where they live, learn, and work;
- National efforts to reduce environmental risk are based on the best available scientific information;
- Federal laws protecting human health and the environment are enforced fairly and effectively;
- Environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy;
- All parts of society -- communities, individuals, businesses, and state, local and tribal governments have access to accurate information sufficient to effectively participate in managing human health and environmental risks;
- Environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive; and
- The United States plays a leadership role in working with other nations to protect the global environment (US EPA, 2018).

3. State Agencies & Regulations

i. State Water Quality Control Board

The State Water Resources Control Board was established in 1967 by the Legislature. The Board succeeded to the functions of the former State Water Rights Board and the State Water Quality Control Board. The mission of the State Water Board is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables the Water Board to provide comprehensive protection for California's waters (State Water Board, 2018).

ii. Regional Water Quality Control Board

The nine California Regional Water Quality Control Boards (Regional Boards) were originally established in the Dickey Water Pollution Control Act of 1949. The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop “basin plans” for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality. (State Water Board, 2018).

The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges (Central Valley Water Board, 2018).

iii. The Porter-Cologne Water Quality Control Act

The Porter cologne Water Quality Control Act, also known as the “Water Act” requires water resources of the State be put to beneficial use to the fullest extent of which they are capable. Waste, unreasonable use, or unreasonable method of use of water shall be prevented. Conservation of water is to be exercised with a view to the reasonable and beneficial use in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or watercourse in California shall be limited as shall be reasonably required for the beneficial use to be served. Such right does not and shall not extend to the waste, unreasonable use, or unreasonable method of use or unreasonable method of diversion of water. Together, the ten water boards have primary responsibility for implementing and enforcing the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter- Cologne Water Quality Control Act. (Water Code, 2018).

iv. California Department of Water Resources

The Department of Water Resources (DWR) is responsible for managing and protecting California's water resources. DWR works with other agencies to benefit the State's people and to protect, restore, and enhance the natural and human environments (DWR About, 2018).

DWR's major responsibilities include:

- Overseeing the statewide process of developing and updating the California Water Plan (Bulletin 160 series).
- Planning, designing, constructing, operating, and maintaining the State Water Project.
- Protecting and restoring the Sacramento-San Joaquin Delta.
- Regulating dams, providing flood protection, and assisting in emergency management.
- Working to preserve the natural environment and wildlife.
- Educating the public about the importance of water, water conservation, and water safety.
- Providing grants and technical assistance to service local water needs.
- Collecting, analyzing, and reporting data in support of their mission to manage and protect California's water resources.

v. SB 610 (Costa, 2001)

This Bill requires additional information to be included as part of an urban water management plan if groundwater is identified as a source of water available to the supplier. This law also requires an urban water supplier to include in the plan a description of all water supply projects and programs that may be undertaken to meet total projected water use (Costa, 2001).

4. Local Policy & Regulations

i. Tulare County General Plan Policies

The General Plan (2012) has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the proposed project are listed below.

AG-1.17 Agricultural Water Resources - The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

HS-4.4 Contamination Prevention - The County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination.

HS-5.2 Development in Floodplain Zones - The County shall regulate development in the 100-year floodplain zones as designated on maps prepared by FEMA in accordance with the following:

- Critical facilities (those facilities which should be open and accessible during emergencies) shall not be permitted.

- Passive recreational activities (those requiring non-intensive development, such as hiking, horseback riding, picnicking) are permissible.
- New development and divisions of land, especially residential subdivisions, shall be developed to minimize flood risk to structures, infrastructure, and ensure safe access and evacuation during flood conditions.

HS-5.4 Multi-Purpose Flood Control Measures - The County shall encourage multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the County's streams, creeks, and lakes. Where appropriate, the County shall also encourage the use of flood and/or stormwater retention facilities for use as groundwater recharge facilities.

HS-5.9 Floodplain Development Restrictions - The County shall ensure that riparian areas and drainage areas within 100-year floodplains are free from development that may adversely impact floodway capacity or characteristics of natural/riparian areas or natural groundwater recharge areas.

HS-5.11 Natural Design - The County shall encourage flood control designs that respect natural curves and vegetation of natural waterways while retaining dynamic flow and functional integrity.

WR-2.1 Protect Water Quality - All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site.

WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement - The County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board.

WR-2.3 Best Management Practices (BMPs) - The County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board.

WR-2.4 Construction Site Sediment Control - The County shall continue to enforce provisions to control erosion and sediment from construction sites.

WR-2.5 Major Drainage Management - The County shall continue to promote protection of each individual drainage basin within the County based on the basins' unique hydrologic and use characteristics.

WR-2.6 Degraded Water Resources - The County shall encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

WR-2.8 Point Source Control - The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental

Quality Act review and project approval process) and monitored to ensure long-term compliance.

WR-3.3 Adequate Water Availability - The County shall review new development proposals to ensure the intensity and timing of growth will be consistent with the availability of adequate water supplies. Projects must submit a Will-Serve letter as part of the application process and provide evidence of adequate and sustainable water availability prior to approval of the tentative map or other urban development entitlement.

WR-3.5 Use of Native and Drought Tolerant Landscaping - The County shall encourage the use of low water consuming, drought-tolerant and native landscaping and emphasize the importance of utilizing water conserving techniques, such as night watering, mulching, and drip irrigation.

WR-3.6 Water Use Efficiency - The County shall support educational programs targeted at reducing water consumption and enhancing groundwater recharge.

WR-3.10 Diversion of Surface Water - Diversions of surface water or runoff from precipitation should be prevented where such diversions may cause a reduction in water available for groundwater recharge.

ii. Tulare County Environmental Health

The mission of the Tulare County Division of Environmental Health Services (TCDEHS) is to enhance the quality of life in Tulare County through implementation of environmental health programs that protect public health and safety as well as the environment. This goal is accomplished by overseeing and enforcing numerous different programs, from food facility inspections to hazardous waste. All inspectors are licensed and/or certified in the field they practice in and participate in continuing education to maintain licensure (TCDEHS, 2018).

II. SITE DESCRIPTION

The study area is located within the Kaweah Subbasin of the Tulare Lake Hydrologic Region of the San Joaquin Valley that comprises the southern extent of the Great Central Valley of California. The city of Visalia and site are situated within the farming region of Tulare County. Predominant crops grown around the site include alfalfa, corn, cotton, milo, wheat, walnuts, and almonds.

The site is located near the southwest boundary of the City of Visalia within a predominantly agricultural setting (Figure 1). The current site is unoccupied and comprises approximately 19.98 acres with a shop and former residence converted to an office. The shop and office occupy approximately 2.5 acres within the 19.98 acre parcel. The office and shop are surrounded by locked chain-link fencing. The remaining parcel is farmed in seasonal crops. There is one domestic water well on site within the fenced area connected to an above ground water storage tank. There are two agricultural water wells on the site located near the northeast corner of the site (Figure 2). The northernmost well is an older well and is not in use. A newer, approximately three year old well, is also located near the northeast corner of the site 160 feet south of the older agricultural well.

A. Site Location and Access

To access the site from the north of Visalia from the intersection of Highway 198 and Highway 99, continue 2.5-miles south to the Avenue 280 (Caldwell Avenue) off-ramp. Go west on Avenue 280 0.8-miles to the site on the south side of Avenue 280. From the south, go approximately 5-miles north from Tulare to the Avenue 280 exit and go west 0.8-miles. The site is on the south side of Avenue 280 (Figure 1).

B. Proposed Development

The proposed development will include a concrete mixing plant, cement powder storage, aggregate storage, and batch operations to produce ready mix concrete. A proposed hot mix asphalt plant will be onsite that is similar to the concrete plant, except the material will be heated up. An overlay of the proposed project is shown on Figure 2.

C. Climate

Runoff from the Sierra Nevada mountains to the west provides good quality water for irrigation along with local groundwater. The region around the site experiences a long growing season (April through October), warm to hot summers, and a fall harvest period usually sparse in rain. Winters are moist and often blanketed with tule fog. The valley floor is surrounded on three sides by the Sierra Nevada Mountain Range to the east, the Coast Ranges to the west, and the Tehachapi and Transverse Ranges to the south, resulting in a comparative isolation of the valley from marine effects. Because of this and the comparatively cloudless summers, normal maximum temperature advances to a high of 101 degrees Fahrenheit during the latter part of July. Valley winter temperatures are usually mild, but during infrequent cold spells air temperature occasionally drops below freezing. Heavy frost occurs during the winter in most years, and the geographic orientation of the valley generates prevailing winds from the northwest (Water Plan, 2013).

The mean annual precipitation in the valley portion of the region ranges from about 6 to 11 inches, with 67 percent falling from December through March, and 95 percent falling from October through April. The region receives more than 70 percent of the possible amount of sunshine during all but four months, November through February. In the winter months, tule fog, which can last up to two weeks, reduces sunshine to a minimum (Water Plan, 2013).

III. HYDROLOGIC CONDITIONS

A. Hydrologic Setting

The City of Visalia and subject site are located within the Kaweah Subbasin (5-22.11) of the Tulare Lake Hydrogeologic Region. The site is geologically located within the distal end of coalescing alluvial fans along the east half of the valley. Over time, glaciers and streams have eroded the Sierra Nevada Mountain Range to the east and Coast Ranges to the west, and deposited interfingering alluvial materials of clay, silt, sand, and gravel filling the present-day valley. These deposits have formed vast fluvial fans at the base of the mountain ranges that spread laterally and parallel to the mountain fronts. The major alluvial geomorphic feature is the Kaweah River Fan and the major fan to the north is the Kings River Fan emanating from the Sierra Nevada Mountain Range. On a whole, all of these fans systems have coalesced forming a large heterogenous alluvial plain, upon which the site is located.

The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,000 square miles) and includes all of Kings and Tulare counties and most of Fresno and Kern counties. Significant geographic features include the southern half of the San Joaquin Valley, the Temblor Range to the west, the Tehachapi Mountains to the south, the southern Sierra Nevada to the east, and Coast Ranges to the west. Major population centers include Fresno, Bakersfield, and Visalia. The cities of Fresno and Visalia are entirely dependent on groundwater for their supply, with Fresno being the second largest city in the United States reliant solely on groundwater (DWR, 2016).

The Tulare Lake region is one of the nation’s leading agricultural production areas, growing a wide variety of crops on about three million irrigated acres. Agricultural production has been a mainstay of the region since the late 1800s. However, since the mid-1980s, other economic sectors, particularly the service sector, have been growing (Water Plan, 2013).

B. Topographic Setting and Drainage Patterns

Topography of the site and surrounding vicinity is relatively flat with a ground surface slope down to the west-southwest of approximately 6-feet per mile (0.1% slope) (Figure 1). Surface water drainage is managed predominantly by farming and irrigation in the region. Fields are routinely leveled by laser to direct irrigation to tailwater ponds. The South Fork of the Persian Ditch is located 1,110-feet northwest of the site. Evans Ditch is located 1,180-feet southeast of the site. These ditches direct surface water for irrigation of surrounding farmland. Regional drainage follows topography generally from northeast to southwest.

C. Surface Water

Rivers draining into the Tulare Lake region include the Kings, Kaweah, Tule, and Kern rivers. Geographic features in the southern portion of the region include lakebeds of the former Buena Vista/Kern and Tulare lakes that comprise the southern half of the region; the Coast Ranges to the west; the Tehachapi Mountains to the south; and the southern Sierra Nevada to the east (Water Plan , 2013).

The Tulare Lake region is divided into several main hydrologic subareas: the alluvial fans from the Sierra foothills and the basin subarea (in the vicinity of the Kings, Kaweah, and Tule rivers and their distributaries); the Tulare Lake bed; and the southwestern uplands. The alluvial fan/basin subarea is characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey surface water originating from the Sierra Nevada. The dominant hydrologic features in the alluvial fan/basin subarea are the Kings, Kaweah, Tule, and Kern rivers and their major distributaries from the western flanks of the Sierra. Geographically related to the site, the Kaweah River begins in Sequoia National Park, flows west and southwest, and is impounded by Terminus Dam. It subsequently spreads into many distributaries around Visalia and Tulare trending toward Tulare Lake (Water Plan, 2013).

The watershed map on Figure 3 shows the Tulare Lake watershed and subbasin watersheds. Surface water flowing to geographic areas of the site begins in Upper Kaweah Water Hydrologic Unit 1803007. The surface waters flow further west into Tulare-Buena Vista Lakes Hydrologic Unit 18030012 and includes the purple and orange shaded areas around Visalia (USGS Watersheds, 2018). Data points from 1994 to 2010 indicate the January maximum flow of 17,948 cubic feet per second (cfs) from 1997 is the highest storm flows into Lake Kaweah on the period of record. Flow from the Kaweah watershed drains into the Kaweah River Delta system and through the many drainages and creeks that meander through the City of Visalia. The January maximum outflow from Lake Kaweah is much less than the inflow due to lake retention (Visalia EIR, 2014).

Surface waterways near the site are the south fork of the Persian Ditch located 1,110-feet to the northwest and Evans Ditch located 1,180-feet to the southeast. These canals direct surface water for irrigation of surrounding farmland.

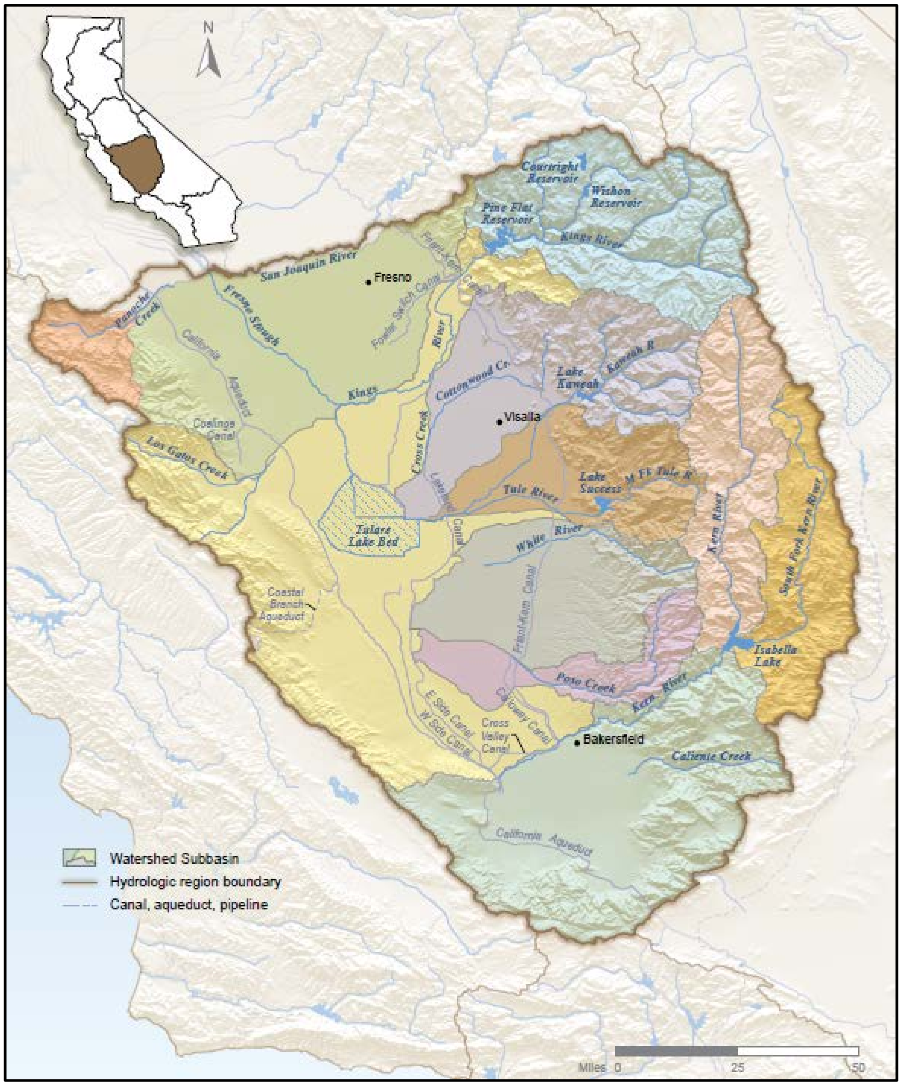

Figure 3. Tulare Lake Region watersheds. Image from Water Plan, 2013.

1. Surface Water Quality

Surface water quality in the Basin is generally good, with excellent quality exhibited by most eastside streams. Regional Water Quality Control Board water quality objectives are presented below (WQCP, Tulare Lake, 2018).

3.1.1 Ammonia – Waters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH_3) to exceed 0.025 mg/l (as N) in receiving waters.

3.1.2 Bacteria – In waters designated REC-1, the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.

3.1.3 Biostimulatory Substances – Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

Chemical Constituents:

Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The Regional Water Board will consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for detrimental levels of chemical constituents developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the State Water Board Division of Drinking Water Programs, the U.S. Food and Drug Administration, the National Academy of Sciences, the U. S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.

At a minimum, water designated "MUN" shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into the plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. At a minimum, water designated MUN shall not contain lead in excess of 0.015 mg/l. The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances. To ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

3.1.5 Color – Waters shall be free of discoloration that causes nuisance or adversely affects beneficial uses.

3.1.6 Dissolved Oxygen – Waste discharges shall not cause the monthly median dissolved oxygen concentrations (DO) in the main water mass (at centroid of flow) of streams and above the thermocline in lakes to fall below 85 percent of saturation concentration, and the 95 percentile concentration to fall below 75 percent of saturation concentration. The DO in surface waters shall always meet or exceed the concentrations in Table 3-1 for the listed specific water bodies and the following minimum levels for all aquatic life:

- Waters designated WARM 5.0 mg/l
- Waters designated COLD or SPWN 7.0 mg/l

Where ambient DO is less than these objectives, discharges shall not cause a further decrease in DO concentrations.

3.1.7 Floating Material – Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

3.1.8 Oil and Grease – Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

3.1.9 pH – The pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH. In determining compliance with the above limits, the Regional Water Board may prescribe appropriate averaging periods provided that beneficial uses will be fully protected.

3.1.10 Pesticides – Waters shall not contain pesticides in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. (For the purposes of this objective, the term pesticide is defined as any substance or mixture of substances used to control objectionable insects, weeds, rodents, fungi, or other forms of plant or animal life.) The Regional Water Board will consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for detrimental levels of chemical constituents developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the State Water Board Division of Drinking Water Programs, the U.S. Food and Drug Administration, the National Academy of Sciences, the U. S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.

At a minimum, waters designated MUN shall not contain concentrations of pesticide constituents in excess of the maximum contaminant levels (MCLs) specified in Table 64444-A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances. To ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

In waters designated COLD, total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of Water and Wastewater, 18th Edition, or other equivalent methods approved by the Executive Officer.

3.1.11 Radioactivity – Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

At a minimum, waters designated MUN shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of Section 64442 and Table 64443 of Section 64443 of Title 22, California Code of Regulations, which are incorporated by reference into the plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.

3.1.12 Salinity – Waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use of the water resources. "The only reliable way to determine the true or absolute salinity of a natural water is to make a complete chemical analysis. However, this method is time-consuming and cannot yield the precision necessary for accurate work" (Standard Methods for the Examination of Water and Wastewater, 18th Edition). Conductivity is one of the recommended methods to determine salinity.

3.1.13 Sediment – The suspended sediment load and suspended sediment discharge rate of waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

3.1.14 Settleable Material – Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

3.1.15 Suspended Material – Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

3.1.16 Tastes and Odors – Waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.

3.1.17 Temperature – Natural temperatures of waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses. Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California, including any revisions.

Elevated temperature wastes shall not cause the temperature of waters designated COLD or WARM to increase by more than 5°F above natural receiving water temperature. In determining compliance with the above limits, the Regional Water Board may prescribe appropriate averaging periods provided that beneficial uses will be fully protected.

3.1.18 Toxicity – All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, biotoxicity tests of appropriate duration, or other methods as specified by the Regional Water Board. The Regional Water Board will also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the State Water Board Division of Drinking Water Programs the U.S. Food and Drug Administration, the National Academy of Sciences, the U. S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors shall not be less than that for the same water body in areas unaffected by the waste discharge, or, when necessary, for other control water that is consistent with the requirements for "dilution water" as described in Standard Methods for the Examination of Water and Wastewater, 18th Edition. As a minimum, compliance shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate; additional numerical receiving water quality objectives for specific toxicants will be established as sufficient data become available; and source control of toxic substances will be encouraged.

3.1.19 Turbidity – Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:

- Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.
- Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.
- Where natural turbidity is equal to or between 50 and 100 NTUs, increases shall not exceed 10 NTUs.
- Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

In determining compliance with the above limits, the Regional Water Board may prescribe appropriate averaging periods provided that beneficial uses will be fully protected.

2. Surface Water Supply

Near the site, surface-water supplies in the past have been generally inadequate to meet irrigation demands, and overdraft on groundwater supplies has been widespread. As a result, water level fluctuations have occurred in response to the groundwater withdrawals. The water table declines rapidly in late spring and summer and recovers as pumping ceases late in the autumn. In over-drafted areas, a year by-year decline has occurred. Imports of Central Valley Project surface water through the Friant Kern Canal have supplied additional recharge to the groundwater basins locally and helped to reduce pumping overdraft (Davis, et. al., 1959).

Surface runoff in the Visalia area generally flows from east to west and terminates in the Tulare Lake Basin. Major surface water resources in the area include the St. John's River, Modoc Ditch, Mill Creek Ditch, Mill Creek, Tulare Irrigation District (TID) Canal, Packwood Creek, Cameron Creek, Deep Creek, Evans Creek, Persian Ditch, and several other local ditches. Except for the TID Canal, most watercourses are intermittent drainages that receive a significant portion of flow from storm water runoff during the rainy season (Visalia EIR, 2014).

Mitigating groundwater overdraft has become an important objective for the state, counties, and the developer of this project. Since groundwater overdraft mitigation has become a common practice, water usage has become more conservative and alternative methods of reuse and recycling have become realities. Water reuse is a proposed mitigation item for this project to reduce the water demand on wells by reducing and eliminating the water volumes required and recycling water for the ready mix concrete plant.

3. Flooding

The proposed project will not contain housing. The project lies within flood area Zone A (shaded in blue on Figure 4); a Special Flood Hazard Area subject to inundation by the 1% annual chance flood according to the Federal Emergency Management Agency (FEMA) flood zone designation. The 1% annual flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. Detailed analyses are not performed for such areas. As a result, no depths or base flood elevation are shown within these zones. Figure 4 shows the FEMA Flood Insurance Rate Map (FIRM), map number 6107C0917E, effective date June 16, 2009.

Figure 4. FEMA FIRM showing the site to be located in Zone A, specified as being in a Special Flood Hazard Area that has a 1% chance of being equaled or exceeded in any given year (100 year flood).

D. Groundwater

1. Groundwater Occurrence

Groundwater from the Kaweah subbasin has been the primary source of water for the subject area in the past. Groundwater will remain the primary source of water for the subject area after development. The Kaweah subbasin is part of the Tulare Lake Basin within the Central Valley and encompasses an area of 446,000 acres on the valley floor with an average annual precipitation of 11 inches (DWR, 2003).

The Tulare Lake Hydrologic Region contains 12 groundwater basins and 7 subbasins that underlie approximately 8,400 square miles, or about 50 percent of the region. The majority of the groundwater in the region is stored in alluvial aquifers. Pumping from alluvial aquifers in the region accounts for about 38 percent of California's total average annual groundwater extraction. The most heavily used groundwater basins in the region include Kings, Westside, Kaweah, Tulare Lake, Tule, and Kern County. These basins account for approximately 98 percent of the average 6.3 million acre-feet (maf) of groundwater pumped annually during the 2005-2010 period. Groundwater pumping rates in the various subbasins were determined to range from about 650 gallons per minute (gpm) to about 1,650 gpm (Water Plan Update, 2013).

The main freshwater-bearing sediments beneath the Site include flood basin deposits, younger alluvium, older alluvium, the Tulare Formation, and continental deposits undifferentiated. Within the alluvial deposits, groundwater occurs under confined and unconfined conditions (Davis et.al., 1959). These deposits supply nearly all the water pumped from wells in the valley and are the primary source of freshwater. Groundwater moves in response to the hydraulic gradient from areas of recharge to areas of discharge. Under natural conditions, the unconfined and semiconfined groundwater in the San Joaquin Valley moves toward topographically low central areas, where it is discharged at the land surface or consumed by plants.

Groundwater resources in the Tulare Lake region are supplied by both alluvial and fractured rock aquifers. Alluvial aquifers are composed of sand and gravel or finer grained sediments, with groundwater stored within the voids, or pore space, between the alluvial sediments. Fractured-rock aquifers consist of impermeable granitic, metamorphic, volcanic, and hard sedimentary rocks, with groundwater being stored within cracks, fractures, or other void spaces. The distribution and extent of alluvial and fractured-rock aquifers and water wells vary significantly within the region (Water Plan Update, 2013).

Fractured-rock aquifers are generally found in the mountain and foothill areas adjacent to alluvial groundwater basins. Due to the highly variable nature of the void spaces within fractured-rock aquifers, wells drawing from fractured-rock aquifers tend to have less capacity and less reliability than wells drawing from alluvial aquifers. On average, wells drawing from fractured-rock aquifers yield 10 gpm or less. Although fractured-rock aquifers are less productive compared to alluvial aquifers, they commonly are the critical sole source of water for many communities (Water Plan Update, 2013).

2. Groundwater Quality

The following objectives apply to all ground waters in the Tulare Lake Basin, except for those areas with specific beneficial use exceptions of selected areas around oil and gas production listed on Table 2-3 of the Tulare Lake Water Quality Control Plan (WQCP, Tulare Lake, 2018).

3.2.1 Bacteria – In ground waters designated MUN, the concentration of total coliform organisms over any 7-day period shall be less than 2.2/100 ml.

3.2.2 Chemical Constituents – Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The Regional Water Board will consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for detrimental levels of chemical constituents developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the State Water Board Division of Drinking Water Programs, the U.S. Food and Drug Administration, the National Academy of Sciences, the U. S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.

At a minimum, waters designated MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.

At a minimum, water designated MUN shall not contain lead in excess of 0.015 mg/l. To ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

3.2.3 Pesticides – No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses.

At a minimum, waters designated MUN shall not contain concentrations of pesticide constituents in excess of the maximum contaminant levels (MCLs) specified in Table 64444-A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances. More stringent objectives may apply if necessary to protect other beneficial uses.

3.2.4 Radioactivity – Radionuclides shall not be present in ground waters in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.

At a minimum, ground waters designated MUN shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of Section 64442 and Table 64443 of Section 64443 of Title 22, California Code of Regulations, which are incorporated by reference into the plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect.

3.2.5 Salinity – All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources, except for those areas with specific beneficial use exceptions as listed in Table 2-3. No proven means exist at present that will allow ongoing human activity in the Basin and maintain ground water salinity at current levels throughout the Basin. Accordingly, the water quality objectives for ground water salinity control the rate of increase. The maximum average annual increase in salinity measured as electrical conductivity shall not exceed the values specified in Table 3-4 for each hydrographic unit, except for those areas with specific beneficial use exceptions as listed in Table 2-3. The average annual increase in electrical conductivity will be determined from monitoring data by calculation of a cumulative average annual increase over a 5-year period.

3.2.6 Tastes and Odors – Groundwaters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

3.2.7 Toxicity – Groundwaters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s). The Regional Water Board will also consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the State Water Board Division of Drinking Water Programs, the U.S. Food and Drug Administration, the National Academy of Sciences, the U. S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

3. Local Groundwater Quality

Groundwater from site groundwater wells was not analyzed. There is one domestic water well on site within the fenced area connected to an above ground water storage tank. There are two agricultural water wells on the site located near the northeast corner of the site (Figure 2). The northernmost well is an older well and is not in use. A newer, approximately three year old well, is also located near the northeast corner of the site 160 feet south of the older agricultural well. Surrounding domestic wells in the near vicinity of the site are assumed to serve the public from the same aquifer.

The well(s) to be used for the site should be sampled with analysis once retrofitted for the project. Sampling and analysis should occur during the initial phases of retrofitting; specifically, during pump testing. If water quality does not meet the State of California standards as discussed above, steps should be taken during the design of the site such as disinfection, to ensure the water is potable for project use.

Groundwater quality was assessed near the site from two Public Water Wells. Data from the Geotracker Groundwater Ambient Program (Geotracker GAMA, 2018) website were downloaded for review. Water quality parameters Nitrate as NO_3, Nitrate as Nitrogen, and Specific Conductance were evaluated from two Public Water Well System Wells near the site. One well is located at the Shell gasoline station approximately 0.8 mile upgradient and east of the site and the second well is located at Sycamore Academy 1.15 miles west and downgradient of the site. Table 1 shows the sample dates and analytical results for the Shell Water Well. A graph of water quality parameter for the Shell Water Well is presented below in Figure 5.

Table 1. Groundwater Quality Parameters for the Shell Water Well located 0.8 miles east of the site.

Date Sampled	Nitrate as NO_3 (mg/L)	Nitrate as Nitrogen (mg/L)	Specific Conductance (µS/cm)
1/2/2002	2	--	--
9/27/2005	2	--	--
8/22/2006	2	--	--
3/1/2007	2.6	--	--
11/27/2007	--	--	130
4/22/2008	--	--	180
9/25/2008	2	--	--
10/14/2008	--	--	180
12/17/2008	2.3	--	--
7/28/2009	0	--	--
2/2/2010	0	--	--
3/15/2011	2.3	--	--
3/16/2011	2	--	--
10/23/2012	3.2	--	--
6/25/2013	2.5	--	--
3/13/2014	2.2	--	--
5/13/2014	2.4	--	--
5/13/2014	--	--	160
5/13/2014	--	--	--
2/24/2015	2.5	--	--
12/15/2015	--	0.5	--
1/21/2016	--	0.45	--
1/30/2017	--	0.42	--
1/5/2018	--	0.46	--
3/23/2018	--	--	220
3/23/2018	--	0.57	--

Figure 5. Water quality with Nitrate as NO_3, Nitrate as Nitrogen, and Specific Conductance, Shell Water Well.

The secondary maximum contaminant level (SMCL) for specific conductance (SP) ranges from 900 to 1,600 micro Siemens per centimeter (µs/cm). According to California Code of Regulations, Title 22, Division 4, Chapter 15, Article 16, the SMCL for SP is not to be exceeded in community water systems. The maximum value for SP in the Shell Water Well was 220 µs/cm between the range of dates analyzed from November 2007 and March 2018.

According to United States Environmental Protection Agency National Primary Drinking Water Regulations, the maximum contaminant level (MCL) for Nitrate as Nitrogen is 10 mg/L. The State Water Resources Control Board MCL for Nitrate as NO_3 is 45 milligrams per liter (mg/L).

The maximum value for Nitrate as NO_3 was 3.2 mg/L and Nitrate as Nitrogen was 0.57 mg/L from January 2002 through March 2018. The measured parameters do not exceed the regulatory SMCL and MCL.

Table 2 shows the sample dates and analytical results for the Sycamore Academy Water Well. A graph of water quality parameter for the Sycamore Academy Water Well is presented below in Figure 6.

Table 2. Groundwater Quality Parameters for the Sycamore Academy Water Well located 1.15 miles west of the site.

Date Sampled	Nitrate as NO_3 (mg/L)	Specific Conductance (µS/cm)
4/22/2004	14	--
4/22/2004	14	--
4/22/2004	--	450
4/22/2004	--	450
3/1/2005	15	--
3/1/2005	15	--
3/14/2006	22	--
3/14/2006	22	--
3/12/2007	21	--
3/12/2007	21	--
3/19/2008	22	--
3/19/2008	22	--
3/19/2008	--	610
3/19/2008	--	610
10/13/2008	--	500
10/13/2008	--	500
5/4/2009	20	--
5/4/2009	20	--
2/1/2010	21	--
2/1/2010	21	--
5/2/2011	25	--
5/2/2011	25	--
5/1/2012	0	--
5/1/2012	0	--
5/2/2013	15	--
5/2/2013	15	--
8/27/2013	31	--
8/27/2013	31	--
8/27/2013	--	490
8/27/2013	--	490
3/4/2014	32	--
3/4/2014	32	--
3/5/2015	35	--

Date Sampled	Nitrate as NO_3 (mg/L)	Specific Conductance (µS/cm)
3/5/2015	35	--
6/3/2015	35	--
6/3/2015	35	--
9/1/2015	35	--
9/1/2015	35	--
3/9/2016	--	520
3/9/2016	--	520

A graph of water quality parameters for the Sycamore Academy Water Well is presented below in Figures 8.

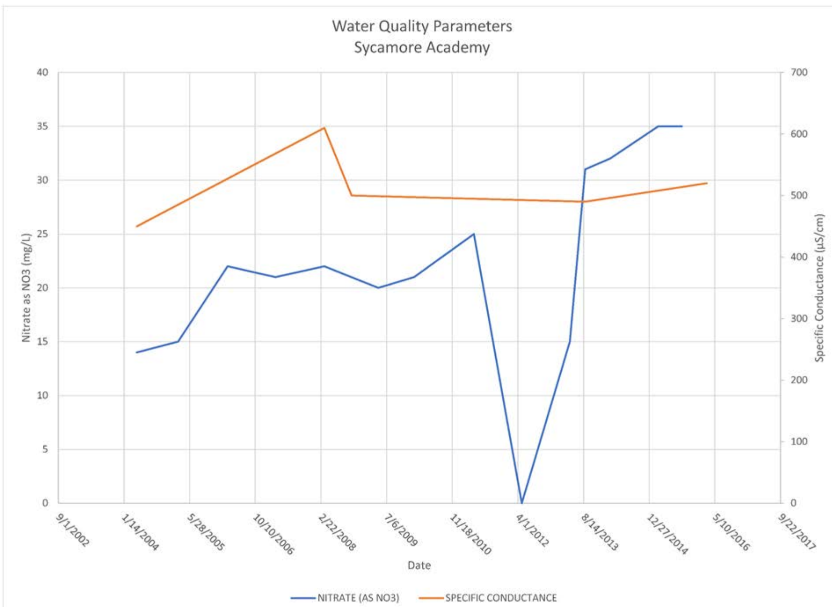

Figure 6. Water quality with Nitrate as NO_3 and Specific Conductance, Sycamore Academy Water Well.

The maximum value for SP in the Sycamore Academy Water Well was 610 µs/cm between the range of dates analyzed from April 2004 and March 2016. The maximum value for Nitrate as NO_3 in the Sycamore Academy Water Well was 35 mg/L between the range of dates analyzed from April 2004 and September 2015. There was no Nitrate as Nitrogen data available for the Sycamore Academy Water Well. Water quality parameters did not exceed the SMCL or MCL.

4. Groundwater Supply

Groundwater flowing through shallow parts of the aquifer system beneath the site emanates as runoff at higher elevations, specifically from the Sierra Nevada Mountains. The eastern valley margin soils are generally more coarse and permeable especially along the east side of the Tule subbasin adjacent to the

Sierra Nevada foothills (USGS, 1995). Deep percolation on the valley floor up-gradient from swampy areas and lakes is a significant source of recharge in wetter areas and during wetter years (Williamson, et.al., 1989).

Based on the Central Valley Hydrologic Model (CVHM), the average groundwater recharge from surface water processes throughout the Central Valley is 7.7-million acre-feet per year. The average annual hydrologic budget from the years 1962-2003 net recharge from landscape (surface water processes) from the CVHM within the combined Kaweah/Tule basin “water balance sub regions” was 710,000 acre-feet (Faunt, 2009).

Recharge rates from precipitation have not changed significantly from predevelopment times. Generally, recharge of the Central Valley Aquifer system occurs during the winter months (December through March) and discharge occurs during the summer months which include the growing season (May through September). Large amounts of water are drawn from storage during the pumping period. The shallow portion of the aquifer system receives some recharge during irrigation. In typical years, water levels generally recover during the wet season (December through March) (Faunt, 2009).

In much of the valley, the annual rainfall is so low that little precipitation penetrates deeply, and soil-moisture deficiency is perennial. Infiltration from stream channels, canals, and irrigated fields are the principal sources of groundwater recharge (Davis, et.al., 1964). Precipitation falling on the valley floor during the rainy season provides only a small part of the total recharge (Faunt, 2009).

5. Local Depth to Groundwater

The Department of Water Resources (DWR) Groundwater Information Center Interactive Map Application (GICIMA) was reviewed for site specific depth to groundwater (DWR, 2018). Groundwater contours around the site from Spring 2011 through Spring 2017 were analyzed for depth to groundwater beneath the site. Figure 7 below shows the depth to groundwater beneath the site since 2011.

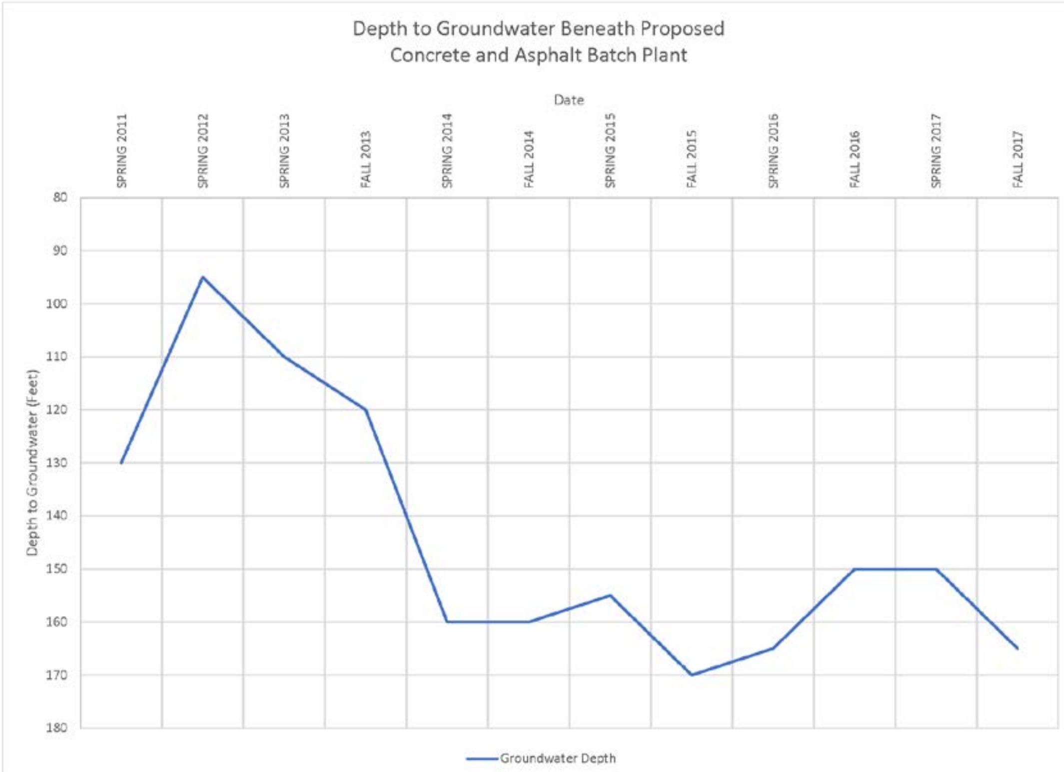

Figure 7. Depth to Groundwater Beneath the Site – Spring 2011 through Spring 2017

6. Site Depth to Groundwater

On September 21, 2018, depth to groundwater was assessed in the three onsite wells using a Solinst Model 101 150-foot water level meter. Depth to groundwater was measured at 127.36 feet below the top of the well casing in the older unused northeast ag well. The new ag well was not accessible. The domestic well was sounded but groundwater was deeper than 150-feet; the maximum length of the water level meter line.

7. Anticipated Highest Groundwater

Based on Figure 7, the anticipated highest groundwater is approximately 95 feet below ground surface. Site specific soil data can be used to assess the anticipated depth to groundwater by looking at textural features such as mottling and redox conditions. However, site specific subsurface soils were not available for review.

8. Groundwater Flow Direction

Groundwater surface can be contoured from three or more elevation data points, typically from wells surrounding a site, using relative elevations based on a temporary benchmark or mean sea level. A minimum of three wells is necessary to calculate the groundwater surface and define the slope of the groundwater surface. Three wells were not available to measure groundwater elevations around the site.

In lieu of groundwater data from on-site water wells, semi-annual groundwater elevation data from DWR GICIMA during Spring 2011 through Fall 2017 were evaluated to assess the groundwater surface and regional groundwater flow direction. Groundwater surface contours from the DWR indicate groundwater flows primarily to the south and southwest from Spring 2011 through Fall 2017 measurements. Table 3 below shows the groundwater flow direction for fall and spring from 2011 through 2017.

Table 3. Groundwater flow direction beneath the site from DWR groundwater contours.

Monitoring Period	Groundwater Flow Direction (DWR)
Spring 2011	Southwest
Spring 2012	Southwest
Spring 2013	South
Fall 2013	South
Spring 2014	South
Fall 2014	Southwest
Spring 2015	South
Fall 2015	South
Spring 2016	Southeast
Fall 2016	Southwest
Spring 2017	South
Fall 2017	South

IV. SUMMARY AND CONCLUSIONS

The California Environmental Quality checklist was evaluated based on the hydrology and water quality conditions reviewed for the site.

Section IX. HYDROLOGY AND WATER QUALITY

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Septic System

The Onsite Wastewater Treatment System (OWTS) is located on the west side of the office and is constructed with a dual chamber septic tank that is four feet wide by nine feet long by four feet deep and approximately 1,000 gallon volume. Effluent from the septic tank is leached into a four foot diameter by 30 foot deep concrete lined seepage pit. Available information for the septic system indicates it was repaired in January 1978. The septic system was utilized for onsite use. According to the site owner, the currently permitted OWTS is functioning and is expected to be utilized for the proposed operations.

Onsite wastewater systems in the area are served by private septic systems. The City of Visalia Boundary is located on the north side of Avenue 280, north of the site. There are no city sewer or stormwater conveyance structures near the site.

On April 5, 2018, the State Water Resources Control Board (SWRCB) approved the Local Agency Management Program (LAMP) for Tulare County. The Central Valley Regional Water Quality Control Board approved Resolution R5-2018-0009 applies to the Local Agency Management Program (LAMP) for the Tulare County Resource Management Agency and Tulare County Environmental Health Division (CRWCQB, 2018).

The LAMP provides a new regulatory framework for the permitting of Onsite Wastewater Treatment Systems (OWTS). The Tulare County Environmental Health Services Division (TCEHSD) prepared a document to advise local OWTS designers and other stakeholders of some of the major changes in the LAMP as follows (Tulare County, 2018).

The SWRCB adopted the final version of the Water Quality Control Policy for Siting, Design, Operation and Maintenance of OWTS in May 2013. Pursuant to Water Code Section 13291 (b)(3), the adopted policy describes requirements authorizing a qualified local agency to implement the adopted policy. The LAMP policies are developed by the local agencies based on local conditions. Approval of Tulare County's LAMP by the SWRCB allows the LAMP to become the standard by which the County will regulate OWTS. This approach allows for greater flexibility at the local level, rather than a "one size fits all" approach outlined by the State.

The LAMP covers the installation of new & replacement OWTS, as well as repair systems for existing OWTS. The LAMP is not intended to cover OWTS that have the following characteristics.

- Existing OWTS that are functioning normally.
- Proposed OWTS that will have design waste flow of greater than 3,500 gallons per day.
- OWTS with anticipated high amounts of fats, oils & grease (FOG), or OWTS with anticipated high values for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS).
- OWTS that will require nitrogen reduction to mitigate certain limiting conditions.
- OWTS with supplemental treatment systems

When the above listed special conditions apply to a proposed/replacement OWTS, the application for the OWTS may be referred to the SWRCB for review and/or permitting.

The project OWTS is currently functional and is expected to be utilized for the proposed operations. If the current system is functioning normally and does not meet any of the other four characteristics outlined in bullet points above, it will not be required to fall under the conditions of the Tulare County LAMP and should be allowed for use considering it is fully functional and can handle design flows for proposed operations. If the on-site OWTS is not fully functional and meets any of the other four characteristics outlined in bullet points above, the system will not be covered by the Tulare County LAMP and will be referred to the SWRCB for review and/or permitting.

If new, replacement, or repair of the existing system is proposed or required for the site, the design and construction will fall under the Tulare County LAMP regulatory standards for the installation of new & replacement OWTS, as well as repair systems for the existing OWTS. It is our understanding that the project OWTS is permitted and fully functional and will be utilized for the proposed operations. Therefore, impact form the project OWTS is less than significant.

<u>Stormwater</u>

The Federal Clean Water Act, as amended in 1987, is the principal legislation for establishing requirements or the control of stormwater pollutants from urbanization and related activities. The State Porter-Cologne Act (Water Code 13000, et seq.) is the principal legislation for controlling stormwater pollutants in California. In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges, including discharges associated with construction activities, under the NPDES Program (CSQA Industrial/Commercial, 2003).

In California, the State Water Resources Control Board (SWRCB) through the nine Regional Water Quality Control Boards (RWQCB) administers the NPDES stormwater permitting program. For industrial facilities and construction activities, the SWRCB elected to issue statewide general permits that apply to all stormwater discharges requiring an NPDES permit (CSQA Industrial/Commercial, 2003).

Construction and commercial activities regarding stormwater best management practices (BMPs) for the site should be identified under a Stormwater Pollution Prevention Plan (SWPPP). BMPs are measures to prevent or mitigate pollution. Potential sources of pollution could include maintenance of machinery, the asphalt plant, and concrete plant. Pollutants could include petroleum hydrocarbons such as oil and grease, gasoline constituents, diesel constituents, natural gas, and suspended solids.

SWPPP requirements include the following (General Permit, 2012).

The discharger shall ensure that the Storm Water Pollution Prevention Plans (SWPPPs) for all traditional project sites are developed and amended or revised by a qualified SWPPP Developer (QSD). The SWPPP shall be designed to address the following objectives:

1) All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled.
2) Where not otherwise required to be under a Regional Water Board permit, all non-storm water discharges are identified and either eliminated, controlled, or treated.
3) Site BMPs are effective and result in the reduction or elimination of pollutants in storm water discharges and authorized non-storm water discharges from construction activity to the BAT/BCT standard.
4) Calculations and design details as well as BMP controls for site run-on are complete and correct.
5) Stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

To demonstrate compliance with requirements of the General Permit, the QSD shall include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs. The discharger shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

For construction activities, selection and implementation of best management practices (BMPs) is based on the pollution risks associated with the construction activity. The pollution prevention objectives of BMPs are defined based on a review of information gathered during the assessment of the site and planned activities (CSQA Construction, 2003). Once defined, BMP objectives are developed and BMPs selected. The BMP objectives for construction projects are as follows:

- Control of Erosion, and Discharge of Sediment:
    - Minimize Disturbed Areas: Only clear land which will be actively under construction in the near term (e.g., within the next 6-12 months), minimize new land disturbance during the rainy season, and avoid clearing and disturbing sensitive areas (e.g., steep slopes and natural watercourses) and other areas where site improvements will not be constructed.
    - Stabilize Disturbed Areas: Provide temporary stabilization of disturbed soils whenever active construction is not occurring on a portion of the site. Provide permanent stabilization during finish grade and landscape the site.
    - Protect Slopes and Channels: Safely convey runoff from the top of the slope and stabilize disturbed slopes as quickly as possible. Avoid disturbing natural channels. Stabilize temporary and permanent channel crossings as quickly as possible and ensure that

increases in runoff velocity caused by the project do not erode the channel.
  - Control Site Perimeter: Delineate site perimeter to prevent disturbing areas outside the project limits. Divert upstream run-on safely around or through the construction project. Local codes usually state that such diversions must not cause downstream property damage or be diverted into another watershed. Runoff from the project site should be free of excessive sediment and other constituents. Control tracking at points of ingress to and egress from the project site.
  - Retain Sediment: Retain sediment-laden waters from disturbed, active areas within the site.

- Manage Non-Stormwater Discharges and Materials:
  - Practice Good Housekeeping: Perform activities in a manner to keep potential pollutants from coming into contact with stormwater or being transported off site to eliminate or avoid exposure.
  - Contain Materials and Wastes: Store construction, building, and waste materials in designated areas, protected from rainfall and contact with stormwater runoff. Dispose of all construction waste in designated areas and keep stormwater from flowing onto or off of these areas. Prevent spills and clean up spilled materials.

BMPs for erosion and sediment control are selected to meet the BMP objectives based on specific site conditions, construction activities, and cost. Various BMPs may be needed at different times during construction since activities are constantly changing site conditions. Selection of erosion control BMPs should be based on minimizing disturbed areas, stabilizing disturbed areas, and protecting slopes and channels. Selection of sediment control BMPs should be based on retaining sediment on-site and controlling the site perimeter (CSQA Construction, 2003).

For commercial or industrial BMPs, they are commonly defined two ways: whether they are Non-Structural or Structural and whether they are Source Control or Treatment Control (CSQA Industrial/Commercial, 2003). The following provides a framework for selection of BMPs.

- Non-Structural BMPs - Generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with industrial activity from entering stormwater. They are generally low cost and low technology in nature.

- Structural BMPs - Some prevent the pollutants from reaching stormwater, such as a roof cover. Others treat or remove pollutants in stormwater, such as detention basins.

- Source Control BMPs - Prevent contact between stormwater and the pollution source and can be structural or non-structural. Examples of source control nonstructural and structural BMPs include using alternative less toxic chemicals and covering an activity area that is a pollutant source. Source control BMPs are preferred over treatment control BMPs because they are generally 100% effective if implemented properly and are usually, but not always less costly than treatment control BMPs.

Source Control BMPs include:

- **Non-Stormwater Management**
  - Non-Stormwater Discharges
  - Spill Prevention, Control and Cleanup
- **Vehicle and Equipment Management**
  - Vehicle and Equipment Fueling
  - Vehicle and Equipment Cleaning
  - Vehicle and Equipment Repair
- **Material and Waste Management**
  - Outdoor Loading/Unloading
  - Outdoor Liquid Container Storage
  - Outdoor Equipment Operations
  - Outdoor Storage of Raw Materials
  - Waste Handling and Disposal
  - Safer Alternative Products
- **Building and Grounds Management**
  - Contaminated or Erodible Areas
  - Building & Grounds Maintenance
  - Building Repair and Construction
  - Parking/Storage Area Maintenance
  - Drainage System Maintenance

- Treatment Control BMPs - Treat the stormwater to remove pollutant(s) and are structural by their basic nature. Treatment control BMPs are not 100% effective, even if maintained and operated properly. There is also uncertainty as to the effectiveness and reliability of treatment control BMPs.

Treatment Control BMPs include:

- Infiltration Trench
- Infiltration Basin
- Retention/Irrigation
- Wet Pond
- Constructed Wetland
- Extended Detention Basin
- Vegetated Swale
- Vegetated Buffer Strip
- Bioretention
- Media Filter
- Water Quality Inlet
- Multiple Systems

Groundwater Quality

The California Department of Public Health's water system permit application indicates that any well serving drinking water to at least 25 persons for at least 60 days out of the year is a public water system. The facility is not expected to employ more than 25 workers for more than 60 days a year, therefore the site would be considered a non-community water system. The proposed project will utilize the existing domestic well and/or new agricultural well for potable uses associated with the project.

Site specific groundwater quality data were not available. Groundwater quality was assessed near the site from data obtained on the Geotracker GAMA website. Water quality parameters Nitrate as NO_3, Nitrate as Nitrogen, and Specific Conductance were evaluated from two Public Water Well System Wells near the site. One well is located at the Shell gasoline station approximately 0.8 mile upgradient and east of the site and the second well is located at Sycamore Academy 1.15 miles west and downgradient of the site.

The maximum value for SP in the Shell Water Well was 220 µs/cm between the range of dates analyzed from November 2007 and March 2018. The maximum value for Nitrate as NO_3 was 3.2 mg/L and Nitrate as Nitrogen was 0.57 mg/L from January 2002 through March 2018. The measured parameters do not exceed the regulatory SMCL and MCL.

The maximum value for SP in the Sycamore Academy Water Well was 610 µs/cm between the range of dates analyzed from April 2004 and March 2016. The maximum value for Nitrate as NO_3 in the Sycamore Academy Water Well was 35 mg/L between the range of dates analyzed from April 2004 and September 2015. There was no Nitrate as Nitrogen data available for the Sycamore Academy Water Well. Water quality parameters did not exceed the SMCL or MCL.

All infrastructure designed for the site will be constructed to local, state, and/or federal standards. All potential sources of pollution will be designed to retain the pollution and meet regulatory requirements. It is anticipated that the project will require preparation and approval of waste discharge requirements by the Central Valley Regional Water Quality Control Board. Therefore, violation of water quality standards or waste discharge requirements well be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

The project owner has indicated the project will require 5,000 to 6,000 gallons of water for daily operations; equal to 3.5 to 4.2 gallons of flow per minute from the newly constructed agricultural well located near the northeast corner of the site. Based on these estimates, total annual flow is estimated to be 5.60 to 6.72 acre-feet per year. Anticipated water use for the project will be from the office, dust control, landscaping, and the concrete and asphalt plants.

It is estimated that a one-acre rural residential property with one domestic well utilizes approximately 2.0 to 3.0 acre-feet per year depending on home size and irrigation use. The total estimated groundwater usage for the project of between 5.60 and 6.72 acre-feet is approximately twice that of the average rural residential property with a domestic well. Therefore, depletion of groundwater by the project will be less than significant.

The estimated change in storage beneath the 19.98 acre site was calculated with change in groundwater elevation across various date range spanning the years 2003 through 2018 in the fall and spring seasons. These temporal and groundwater elevation data were reviewed from the Department of Water Resources GICIMA. The 2013 California Water Plan reports minimum and maximum specific yields values for the southern San Joaquin Valley aquifer system of 0.07 and 0.17. Table 3 shows the calculated minimum and maximum change in storage beneath the site for various date ranges.

The minimum specific yield (0.07), 19.98 acre site, and groundwater elevation changes yielded a minimum change in storage of 1.1 acre-feet and a maximum of 69.9 acre-feet. The average change in storage was 28.5 acre-feet across all date ranges.

The maximum specific yield (0.17), 19.98 acre site, and groundwater elevation changes yielded a minimum change in storage of 2.7 acre-feet and a maximum of 169.8 acre-feet. The average change in storage was 67.5 acre-feet across all date ranges.

Table 3. Change in Storage Beneath Site – Date Ranges 2003 through 2018

Acres of Site	19.98
Specific Yield, Sy=	
0.07	0.17

Date Range	Elevation Change (Feet)	Change in Storage Acre-Feet (Sy = 0.07)	Change in Storage Acre-Feet (Sy = 0.17)
S2018-S2017	10	14.0	34.0
S2018-S2015	0.8	1.1	2.7
S2018-S2013	15.5	21.7	52.6
S2018-S2008	30	42.0	101.9
F2017-F2016	10	14.0	34.0
F2017-F2012	20	28.0	67.9
S2017-S2016	10	14.0	34.0
S2017-S2014	18	25.2	61.1
F2016-F2011	30	42.0	101.9
S2016-S2015	10	14.0	34.0
S2016-S2013	40	55.9	135.9
S2016-S2011	45	62.9	152.8
S2016-S2006	50	69.9	169.8
F2015-F2012	20	28.0	67.9
S2015-S2014	9	12.6	30.6

Date Range	Elevation Change (Feet)	Change in Storage Acre-Feet (Sy = 0.07)	Change in Storage Acre-Feet (Sy = 0.17)
S2015-S2012	29.3	41.0	99.5
F2014-F2013	9	12.6	30.6
F2014-F2011	22.3	31.2	75.7
S2014-S2013	7.3	10.2	24.8
S2013-S2012	13	18.2	44.2
S2013-S2003	18	25.2	61.1
	MAXIMUM	69.9	169.8
	MINIMUM	1.1	2.7
	ARITHMETIC MEAN	28.5	67.5

Values in Red = Nearby Well 19S24E08D002M

Values in Black = Interpolated from GICIMA Contours

*Data from DWR Groundwater Information Center Interactive Map Application

** Specific Yield values from 2013 California Water Plan Update

The overall calculated changes in storage beneath the site ranged from 1.1 acre feet to 169.8 acre-feet. One date range, from spring 2015 to spring 2018 included a groundwater elevation change of 0.8 feet and yielded a change in storage between those years of 1.1 acre-feet. Most of the calculated changes in storage were a magnitude larger than the minimum and were greater than the estimated changes in storage for the site of 5.60 to 6.72 acre-feet. Therefore, based on historical changes in groundwater beneath the site, the planned 5,000 to 6,000 gallon per day of groundwater usage for the project, and reliability of the water source, the project is not expected to substantially deplete or lower the groundwater table around the site and is less than significant.

We estimate approximately 19.0 acres of the site will be graded and covered with gravel and DG surfacing based on the provided site plan overlain on Figure 2. Run-off and run-on to the site is expected to be controlled with engineered grading. The project is anticipated to include a storm water basin engineered to handle surface water runoff and will also provide recharge. Therefore, the project will not substantially deplete recharge and impact is less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

The project will require an engineered grading plan to control surface water runoff and divert the runoff to an on-site stormwater pond. Based on the proposed sit plan, a majority of the site will be covered in DG or gravel and the remaining portion around the office is to be paved asphalt. Engineered grading to include gravel/DG surface cover will significantly impede erosion of surface soils on and off site.

The site is not crossed by any rivers, streams, canals, or irrigation ditches. The South Fork of the Persian Ditch is located 1,110-feet northwest of the site. Evans Ditch is located 1,180-feet southeast of the site.

These ditches direct surface water for irrigation of surrounding farmland. These surface water features are not expected to inundate the site under normal flow conditions throughout the year and their drainage pattern will not be altered due to the project and therefore is considered less than significant impact.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

The surface topography of the site is relatively flat. Grading for the site is anticipated to include an engineered grading design approved and permitted by Tulare County. The final grading of the site should control the drainage pattern of the site to a stormwater retention pond. A majority of the site will be covered in DG or gravel and the remaining portion around the office is to be paved asphalt. Engineered grading to include gravel/DG surface cover will allow surface flow to be directed to an on-site retention pond. In addition, drainage around the surrounding area of the concrete batch plant will be conveyed to a collection point onsite for containment and recycling further controlling site surface water flow. Figure 2 shows possible locations of the stormwater basin and recycled water containment. Final locations for these two features will be based on a final engineered design prepared by a California licensed Civil Engineer and may be located at other locations other than shown.

Changes to the site drainage pattern will not impact the nearby Persian of Evans ditches and therefore will be no impact.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

It is anticipated that a SWPPP will be prepared for the site and a stormwater basin will be constructed to have adequate capacity for a 50 year storm event. As such, no impacts are expected to occur.

f) Otherwise substantially degrade water quality?

It is anticipated that a General Stormwater Industrial Facility permit and SWPPP will be obtained for the site. If the current OWTS does not meet Tulare County LAMP requirements, a new OWTS will be constructed to meet the new requirements. It is anticipated that the facility will have infrastructure and activities such as truck washing, proper waste management for items such as used oil, vehicle wash area oil/water separators, sediment traps, and collection sumps. Implementation of these activities and features will ensure less than significant impact.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

The proposed project will not contain housing, thus no impact.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Since the project is located with a 100 year flood zone and structures will be onsite, there is less than significant impact with mitigation. Structures such as piles of asphalt or concrete fragments, silos, equipment, shops, and/or offices will be onsite. Since the project is located with a 100 year flood zone, the site should be graded to control and direct flooding from a 100 year storm event around these structures. If grading controls are not completed, optional best management practices such as elevated berms or other engineered alternatives should be employed around the site to impede flooding onto the property. If engineered grading controls are completed, there will be no impact.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

As indicated in the Tulare County General Plan Background Report, two major dams could cause substantial flooding in Tulare County in the event of a failure: Terminus Dam on Lake Kaweah and Success Dam on Lake Success, located approximately 24-miles and 31-miles east of the site, respectively. In addition, there are many smaller dams throughout the county that would cause localized flooding in the event of their failing. However, a comprehensive analysis of the potential for dam failure and possible downstream effects for these upstream dams has not been undertaken. The project lies within flood Zone A , which is a Special Flood Hazard Area with a 1.0 percent annual chance or a 100 year flood according to the FEMA flood zone designation.

The site is not located near a major dam or levee and no impact is expected to occur.

j) Inundation by seiche, tsunami, or mudflow?

The project site is not located by the ocean, near a lake shore, or in areas of steep slopes and is therefore no impact.

V. LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of the responsible party and involved regulatory agencies, unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk and such parties have a duty to determine its adequacy for their intended use, time, and location.

The purpose of this study is to reasonably characterize existing geologic and/or hydrogeologic site conditions. No investigation can be thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed. Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work is performed, our professional opinions are based in part on interpretation of data from discrete locations that may not represent actual conditions at other locations.

No assessment can eliminate uncertainty. This report was intended to reduce, but not eliminate this uncertainty, recognizing reasonable limits of time and cost. Subsurface variations cannot be known, nor entirely accounted for in spite of exhaustive testing. This report should not be regarded as a guarantee that no further recognized geological/hydrogeological conditions are present on or beneath the site beyond that which could have been detected within the scope of work.

The findings, conclusions, and recommendations rendered in this report are solely professional opinions based on information obtained during the assessment. Changes in existing conditions at the site due to time lapse, natural causes, or operations on adjoining properties may deem the conclusions and recommendations inappropriate. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services.

MGS does not warrant the accuracy of work performed or information supplied by others including any of its subcontractors or any segregated portions of this report. In performing our professional services, we have attempted to apply present engineering and scientific judgment and use a level of effort consistent with the standard of practice measured on the date of work and in the locale of the project site for similar type studies.

VI. REFERENCES

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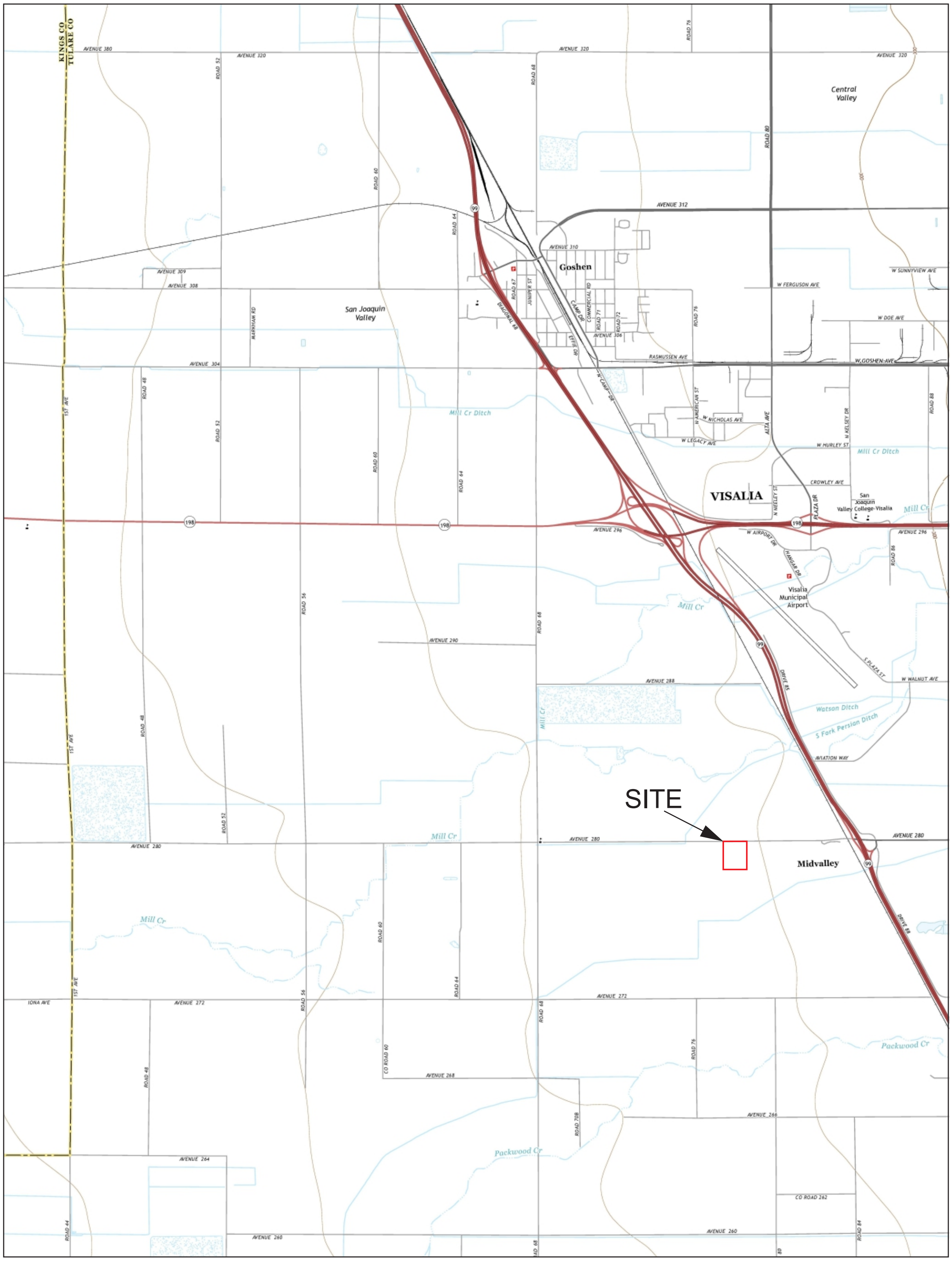
FIGURES



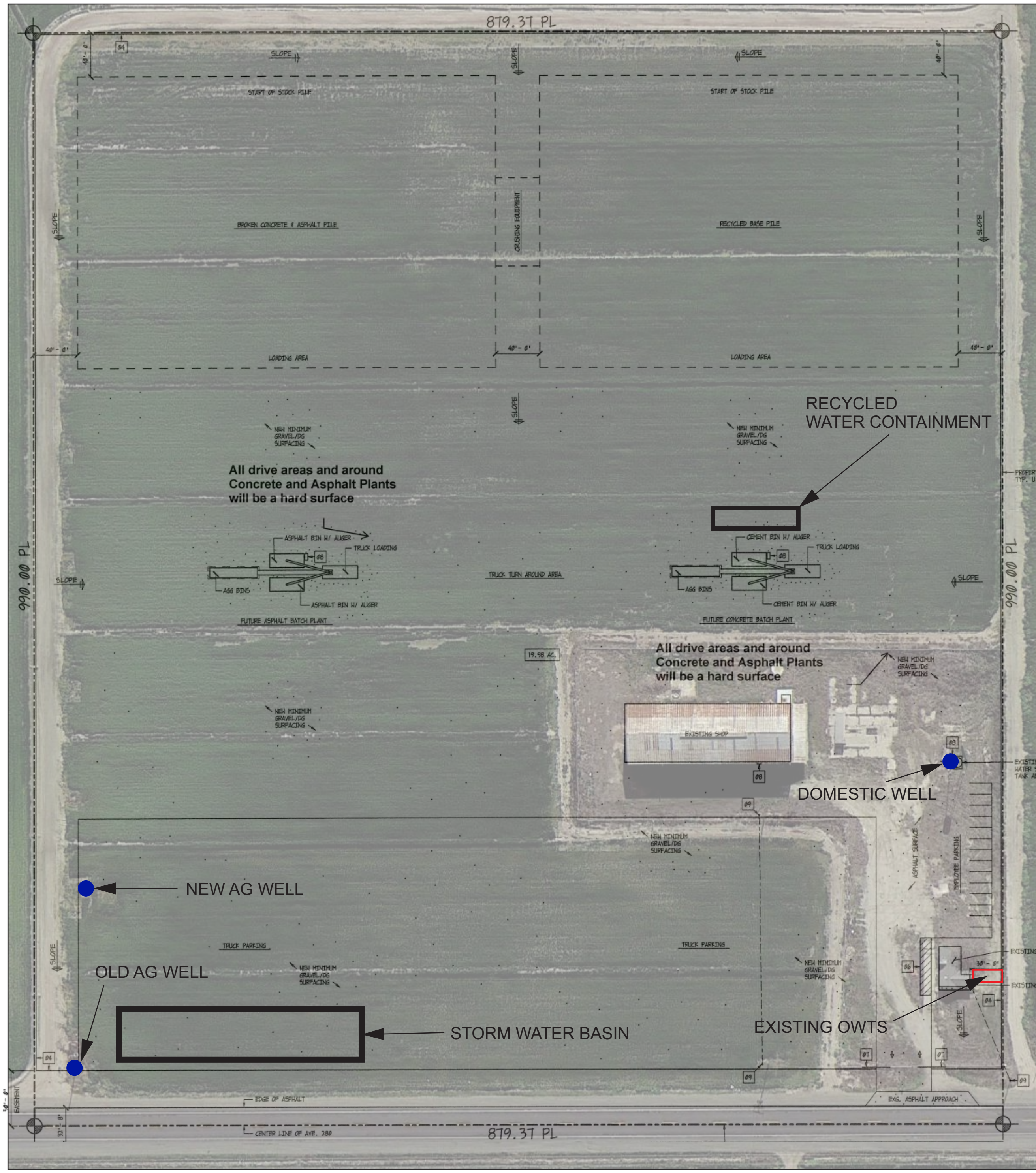
CONTOUR INTERVAL = 10 FEET

0' 5,280'

1 INCH = 1 MILE

N

MASON GEOSCIENCE PO BOX 1020 EXETER, CA 93221 (559) 936-3695	CERTIFIED HYDROGEOLOGIST FREDERICK A. MASON No. 996 Exp. ________ STATE OF CALIFORNIA	PROJECT: **HYDROLOGY AND WATER QUALITY REPORT**	VICINITY MAP	PLOT DATE: 09/27/2018
				PROJECT NO: 18021
		CLIENT: DUNN'S CONSTRUCTION, INC. 15602 AVENUE 196 VISALIA, CA 93292	REVISION LOG:	SCALE: AS SHOWN
				SHEET NO.: FIGURE 1



0' 140'

1 INCH = 140 FEET

N

MASON GEOSCIENCE PO BOX 1020 EXETER, CA 93221 (559) 936-3695	CERTIFIED HYDROGEOLOGIST FREDERICK A. MASON No. 996 Exp. ________ STATE OF CALIFORNIA	*PROJECT:* ***HYDROLOGY AND WATER QUALITY REPORT***	SITE PLAN
		CLIENT: *DUNN'S CONSTRUCTION, INC.* *15602 AVENUE 196* *VISALIA, CA 93292*	*REVISION LOG:*

PLOT DATE: 09/27/2018

PROJECT NO: 18021

SCALE: AS SHOWN

SHEET NO.: FIGURE 2

APPENDIX F

TRAFFIC IMPACT STUDY

APPENDIX F.1

TRIP GENERATION

Table 3
Annual Project Trip Generation

Vehicle	Truck Axles	Capacity	Approx. Material per Year	Annual Trips		Average Weekday Trips*	
				Entering	Exiting	Entering	Exiting
Employee automobiles	n/a	n/a	n/a	4,680	4,680	15	15
Ready Mix Concrete Trucks	4	10 cubic yards (20 tons)	100,000 cubic yards (200,000 tons)	10,000	10,000	40	40
Aggregate Trucks (incoming sand and gravel for concrete)	≥5	25 tons	160,000 tons	6,400	6,400	26	26
Cement and Fly Ash Delivery Trucks	≥5	25 tons	28,000 tons	1,120	1,120	5	5
Recycled Base Trucks (sales)	≥5	25 tons	30,000 tons	1,200	1,200	5	5
Recycled Material End Dumps (Incoming material)	≥5	22 tons	22,500 tons	1,023	1,023	4	4
Recycled Material (Incoming material)	3	12 tons	7,500 tons	625	625	3	3
HMA Trucks	≥5	25 tons	150,000 tons	6,000	6,000	24	24
Aggregate Trucks (incoming sand and gravel for HMA)	≥5	25 tons	120,000 tons	4,800	4,800	19	19
Oil Delivery Trucks	≥5	7,500 gallons	1,664,335 gallons	222	222	1	1
Propane Delivery Trucks	≥5	11,000 gallons	450,000 gallons	41	41	0	0
Fuel Trucks (diesel for on-site vehicle operations)	≥5	-	-	26	26	0	0
Outside Services	2	-	-	250	250	1	1
Other Materials/Services	2	-	-	250	250	1	1
TOTAL:	**-**	**-**	**-**	**36,637**	**36,637**	**144**	**144**
Total 2-axle trucks:	-	-	-	500	500	2	2
Total 3-axle trucks:	-	-	-	625	625	3	3
Total 4-axle trucks:	-	-	-	10,000	10,000	40	40
Total 5-axle trucks:	-	-	-	20,832	20,832	84	84

* Divided over 50 weeks per year and five days per week.

Table 4
Peak Hour Project Trip Generation - Maximum Production*

Vehicle	A.M. Peak Hour		P.M. Peak Hour	
	Entering	**Exiting**	**Entering**	**Exiting**
Employee automobiles	0**	0**	2	10
Ready Mix Concrete Trucks	16	16	8	8
Aggregate Trucks (incoming sand and gravel for concrete)	10	10	0	5
Cement and Fly Ash Delivery Trucks	2	2	0	1
Recycled Base Trucks (sales)	2	2	1	1
Recycled Material End Dumps (Incoming material)	2	2	1	1
Recycled Material (Incoming material)	1	1	0	0
HMA Trucks	10	10	5	5
Aggregate Trucks (incoming sand and gravel for HMA)	8	8	0	4
Oil Delivery Trucks	0	0	0	0
Propane Delivery Trucks	0	0	0	0
Fuel Trucks (diesel for on-site vehicle operations)	0	0	0	0
Outside Services	1	1	0	0
Other Materials/Services	1	1	0	0
TOTAL:	**53**	**53**	**17**	**35**

* Maximum trips per hour are estimated by multiplying the average weekday trips in Table 3 by two (to estimate a very busy day) and then assuming that 20 percent of the trips on that day occur during the a.m. peak hour and 10 percent of the trips on that day occur during the p.m. peak hour, with the exception that most deliveries to the site are not expected to occur late in the day.

** Assumes employees arrive before 7:00 a.m.

Table 5
Peak Hour Project Trip Generation - Passenger Car Equivalents

Vehicle	PCE	A.M. Peak Hour		P.M. Peak Hour	
		Entering	**Exiting**	**Entering**	**Exiting**
Employee automobiles	1.0	0	0	2	10
Ready Mix Concrete Trucks	2.0	32	32	16	16
Aggregate Trucks (incoming sand and gravel for concrete)	3.0	30	30	0	15
Cement Delivery Trucks	3.0	6	6	0	3
Recycled Base Trucks (sales)	3.0	6	6	3	3
Recycled Material End Dumps (Incoming material)	3.0	6	6	3	3
Recycled Material (Incoming material)	2.0	2	2	0	0
HMA Trucks	3.0	30	30	15	15
Aggregate Trucks (incoming sand and gravel for HMA)	3.0	24	24	0	12
Oil Delivery Trucks	3.0	0	0	0	0
Propane Delivery Trucks	3.0	0	0	0	0
Fuel Trucks (diesel for on-site vehicle operations)	3.0	0	0	0	0
Outside Services	1.5	2	2	0	0
Other Materials/Services	1.5	2	2	0	0
TOTAL:		**140**	**140**	**39**	**77**

APPENDIX F.2

TRAFFIC IMPACT STUDY

Traffic Impact Study

Proposed Concrete and Asphalt Batch Plant

Avenue 280 West of State Route 99
Tulare County, California

Prepared For:
4Creeks
324 South Santa Fe Street, Suite A
Visalia, California 93292

Date:
September 28, 2018

Job No.:
18-049.01

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

EXECUTIVE SUMMARY

This report presents the results of a traffic impact study for the proposed concrete and asphalt batch plant in Tulare County, California. This analysis focuses on the anticipated effect of vehicle traffic resulting from the Project.

The Project consists of a concrete batch plant, recycling of concrete and asphalt, and a hot-mix asphalt batch plant. The Project site is located on the south side of Avenue 280 west of State Route (SR) 99 and east of Road 76 in Tulare County, California. The site is not within the Sphere of Influence of the City of Visalia, which generally extends to the Avenue 280 / SR 99 interchange.

The concrete batch plant is expected to produce 100,000 cubic yards of concrete per year. Aggregate, cement, and fly ash will be delivered to the site and ready-mix concrete will be delivered from the site. The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base; it is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site. The hot-mix asphalt (HMA) batch plant is expected to produce 125,000 tons of HMA per year. Aggregate, oil, and propane will be delivered to the site and HMA will be delivered from the site.

Site access will be provided via one main driveway connecting to the south side of Avenue 280 approximately 1,000 feet east of Road 76.

The study locations were determined based on the anticipated Project traffic distribution, the size of the Project, and the existing conditions in the vicinity of the Project site. The following locations are included in the study:

1. Avenue 280 / Road 68
2. Avenue 280 / SR 99 Southbound Ramps
3. Avenue 280 / Drive 85B / Drive 88
4. SR 99 Northbound Ramps / Drive 88

The study time periods include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. The peak hours are analyzed for the following conditions:

- Existing Conditions;
- Existing-Plus-Project Conditions; and
- Cumulative (Year 2040) Conditions With Project.

Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to be generated by the Project, to analyze the existing traffic conditions, and to analyze the traffic conditions projected to occur in the future.

The study intersections are currently operating at acceptable levels of service with adequate storage capacity for the calculated 95th-percentile queues.

The proposed Project will cause a significant impact by decreasing the LOS at the intersection of Avenue 280 and the SR 99 southbound ramps to E during the a.m. peak hour.

Tulare County and the Tulare County Association of Governments have initiated an interchange reconstruction project at the SR 99 / Caldwell Avenue (Avenue 280) interchange that will mitigate the Project impact to a less than significant level. Caltrans is managing the project through a reimbursement agreement and plans to circulate a Draft Environmental Impact Report (DEIR) in October/November of 2018. The interchange reconstruction is programmed and has an identified funding source. The reconstruction is planned to be complete by 2024. The Project impact would remain significant and unavoidable until the interchange reconstruction is complete.

The study intersections are expected to operate at acceptable levels of service with the proposed Project and interchange reconstruction through the year 2040.

To mitigate its share of the impacts to the interchange, the Project may be responsible for an equitable share of any unfunded portions of the interchange project.

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

Mr. Richard Walker
4Creeks
324 South Santa Fe Street, Suite A
Visalia, California 93292

September 28, 2018

Subject: Traffic Impact Study
Proposed Concrete and Asphalt Batch Plant
South Side of Avenue 280 West of State Route 99
Tulare County, California

Dear Mr. Walker:

1.0 INTRODUCTION

This report presents the results of a traffic impact study for the proposed concrete and asphalt batch plant (hereinafter referred to as "the Project") in Tulare County, California. This analysis focuses on the anticipated effect of vehicle traffic resulting from the Project.

2.0 PROJECT DESCRIPTION

The Project consists of a concrete batch plant, recycling of concrete and asphalt, and a hot-mix asphalt batch plant. The Project site is located on the south side of Avenue 280 west of State Route (SR) 99 and east of Road 76 in Tulare County, California. The site is not within the Sphere of Influence of the City of Visalia, which generally extends to the Avenue 280 / SR 99 interchange.

The concrete batch plant is expected to produce 100,000 cubic yards of concrete per year. Aggregate, cement, and fly ash will be delivered to the site and ready-mix concrete will be delivered from the site.

The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base; it is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site.

The hot-mix asphalt (HMA) batch plant is expected to produce 125,000 tons of HMA per year. Aggregate, oil, and propane will be delivered to the site and HMA will be delivered from the site.

Site access will be provided via one main driveway connecting to the south side of Avenue 280 approximately 1,000 feet east of Road 76.

The location of the site is presented in the attached Figure 1, Site Vicinity Map, following the text of this report. A conceptual plot plan is presented in Figure 2, Site Plan.

3.0 STUDY AREA AND TIME PERIOD

The study locations were determined based on the anticipated Project traffic distribution, the size of the Project, and the existing conditions in the vicinity of the Project site. The following locations are included in the study:

5. Avenue 280 / Road 68
6. Avenue 280 / SR 99 Southbound Ramps
7. Avenue 280 / Drive 85B / Drive 88
8. SR 99 Northbound Ramps / Drive 88

Avenue 280 is also known as Caldwell Avenue in the City of Visalia, immediately east of SR 99.

The study time periods include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. The peak hours are analyzed for the following conditions:

- Existing Conditions;
- Existing-Plus-Project Conditions; and
- Cumulative (Year 2040) Conditions With Project.

This report includes analysis of traffic signal warrants at each of the study intersections.

4.0 LEVEL OF SERVICE

The Transportation Research Board *Highway Capacity Manual*, 2010, (HCM2010) defines level of service (LOS) as, "A quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."

Automobile mode LOS characteristics for both unsignalized and signalized intersections are presented in Tables 1 and 2.

Table 1
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Reference: *Highway Capacity Manual,* Transportation Research Board, 2010

Table 2
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is low. Progression is exceptionally favorable or the cycle length is very short.	<10
B	Volume-to-capacity ratio is low. Progression is highly favorable or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable or cycle length is moderate.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

5.0 SIGNIFICANCE CRITERIA AND IMPACT ANALYSIS

5.1 Policies

Policy TC-1.15, Traffic Impact Study, presented in Chapter 13 of the 2030 Update of the Tulare County General Plan dated August 2012 (County General Plan) states: "*The County shall require an analysis of traffic impacts for land development projects that may generate increased traffic on County roads. Typically, applicants of projects generating over 100 peak hour trips per day or where LOS "D" or worse occurs, will be required to prepare and submit this study. The traffic impact study will include impacts from all vehicles, including truck traffic.*"

Policy TC-1.16, County Level Of Service (LOS) Standards, presented in the County General Plan states: "*The County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the Highway Capacity Manual.*"

The Caltrans *Guide for the Preparation of Traffic Impact Studies* dated December 2002 states the following: "*Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained.*"

5.2 Impact Analysis

Traffic impacts will be analyzed based on level-of-service criteria at intersections, and based on queuing impacts for turn lanes and through lanes at signalized intersections. Impact analyses will be performed as follows:

1. Existing-Plus-Project conditions will be compared to the Existing conditions to determine Project impacts;
2. Cumulative Conditions with the Project (Year 2040) will be compared to the Existing conditions to determine long-term impacts for which the Project is partially responsible.

For purposes of this study, a significant traffic impact will be recognized if the Project will:

- decrease the LOS below D at an intersection;
- exacerbate the delay at an intersection already operating at a substandard LOS (i.e., LOS E or LOS F) by increasing the average delay by 5.0 seconds or more; or
- cause the LOS to drop from LOS E to LOS F.

6.0 EXISTING TRAFFIC VOLUMES

Existing peak-hour traffic volumes at the study intersections were determined by performing turning-movement counts between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. on a weekday while school was in session. The counts included pedestrians, bicycles, and heavy vehicles. The existing peak-hour turning movement volumes are presented in Figure 3, Existing Peak-Hour Traffic Volumes.

Twenty-four-hour road segment traffic counts were performed on all approaches to the intersections for purposes of traffic signal warrants analyses.

The traffic count data sheets are presented in Appendix A and indicate the dates the counts were performed.

7.0 LANE CONFIGURATIONS AND INTERSECTION CONTROL

The existing lane configurations and intersection control at the study locations are presented in Figure 4, Existing Lane Configurations and Intersection Control.

The intersection of Drive 88 and the SR 99 northbound ramps is skewed; for purposes of the analyses presented in this report the approaches are designated as follows:

- The eastbound approach consists of the northbound off ramp from SR 99 approaching the intersection;
- The westbound approach consists of vehicles leaving Avenue 280 and traveling southwesterly toward the intersection:
- The northbound approach consists of vehicles traveling northwesterly on Drive 88.

Tulare County and the Tulare County Association of Governments have initiated an interchange reconstruction project at the SR 99 / Caldwell Avenue (Avenue 280) interchange.

Caltrans is managing the project through a reimbursement agreement and plans to circulate a Draft Environmental Impact Report (DEIR) in October/November of 2018. The interchange reconstruction is programmed and has an identified funding source. The reconstruction is planned to be complete by 2024. The reconstruction is expected to include the following:

- ramps connecting directly to Caldwell Avenue at signalized intersections
- additional eastbound and westbound through lanes at the southbound ramps
- loop ramp from eastbound Caldwell Avenue to northbound SR 99
- Drive 85B north of Caldwell Avenue will be realigned to the east.

8.0 PROJECT TRIP GENERATION

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition*, are typically used to estimate the number of trips anticipated to be generated by proposed projects. However, ITE does not present information for concrete batch plants, hot-mix asphalt plants, or production of recycled base. Therefore, the Project trip generation must be estimated based on the volume of material to be hauled and other Project-specific characteristics.

Table 3 presents the various types of vehicles expected to access the Project site. The type of material to be hauled, the vehicle capacity, the annual number of trips, and the average weekday trips are also presented.

Table 4 presents estimates of the maximum peak hour trips estimated to be generated by the Project.

Passenger car equivalents (PCE) represent the number of passenger cars displaced by a single heavy vehicle (vehicles with more than four wheels touching the pavement during normal operations) under certain roadway, traffic, and control conditions. The use of PCEs compensates for the operational characteristics of heavy vehicles (e.g., slower acceleration and deceleration than passenger vehicles) as well as the roadway space displaced. The Transportation Research Board *Highway Capacity Manual, 6th Edition*, identifies a PCE factor of 2.0 for a default mix of trucks in level terrain on highway segments. A greater PCE factor is reasonable for 25-ton capacity trucks because these trucks are long, heavy, accelerate more slowly, and require more distance to decelerate. For purposes of peak hour operations, a PCE of 3.0 is applied for the 25-ton capacity trucks, a PCE of 2.0 is applied for ready-mix trucks and three-axle trucks, and a PCE of 1.5 is applied for two-axle trucks. Table 5 presents a summary of the peak hour Project trips in terms of PCE.

Pass-by trips and internal capture reductions are negligible for this type of project and are not applied to the Project trip generation.

Table 3
Annual Project Trip Generation

Vehicle	Truck Axles	Capacity	Approx. Material per Year	Annual Trips		Average Weekday Trips*	
				Entering	Exiting	Entering	Exiting
Employee automobiles	n/a	n/a	n/a	2,500	2,500	10	10
Ready Mix Concrete Trucks	4	10 cubic yards	100,000 cubic yards	10,000	10,000	40	40
Aggregate Trucks (incoming sand and gravel for concrete)	≥5	25 tons	160,000 tons	6,400	6,400	26	26
Cement Delivery Trucks	≥5	25 tons	30,000 tons	1,200	1,200	5	5
Recycled Base Trucks (sales)	≥5	25 tons	30,000 tons	1,200	1,200	5	5
Recycled Material End Dumps (Incoming material)	≥5	22 tons	22,500 tons	1,023	1,023	4	4
Recycled Material (Incoming material)	3	12 tons	7,500 tons	625	625	3	3
HMA Trucks	≥5	25 tons	125,000 tons	5,000	5,000	20	20
Aggregate Trucks (incoming sand and gravel for HMA)	≥5	25 tons	125,000 tons	5,000	5,000	20	20
Oil Delivery Trucks	≥5	-	-	250	250	1	1
Propane Delivery Trucks	≥5	-	-	350	350	2	2
Fuel Trucks (diesel for on-site vehicle operations)	≥5	-	-	26	26	0	0
Outside Services	2	-	-	250	250	1	1
Other Materials/Services	2	-	-	250	250	1	1
TOTAL:	**-**	**-**	**-**	**33,606**	**33,606**	**138**	**138**
Total 2-axle trucks:	-	-	-	500	500	2	2
Total 3-axle trucks:	-	-	-	625	625	3	3
Total 4-axle trucks:	-	-	-	10,000	10,000	40	40
Total 5-axle trucks:	-	-	-	20,606	20,606	83	83

* Divided over 50 weeks per year and five days per week.

Table 4
Peak Hour Project Trip Generation - Maximum Production*

Vehicle	A.M. Peak Hour		P.M. Peak Hour	
	Entering	**Exiting**	**Entering**	**Exiting**
Employee automobiles	0**	0**	2	10
Ready Mix Concrete Trucks	16	16	8	8
Aggregate Trucks (incoming sand and gravel for concrete)	10	10	0	5
Cement Delivery Trucks	2	2	0	1
Recycled Base Trucks (sales)	2	2	1	1
Recycled Material End Dumps (Incoming material)	2	2	1	1
Recycled Material (Incoming material)	1	1	0	0
HMA Trucks	8	8	4	4
Aggregate Trucks (incoming sand and gravel for HMA)	8	8	0	4
Oil Delivery Trucks	1	1	0	0
Propane Delivery Trucks	1	1	0	0
Fuel Trucks (diesel for on-site vehicle operations)	0	0	0	0
Outside Services	1	1	0	0
Other Materials/Services	1	1	0	0
TOTAL:	**53**	**53**	**16**	**34**

* Maximum trips per hour are estimated by multiplying the average weekday trips in Table 3 by two (to estimate a very busy day) and then assuming that 20 percent of the trips on that day occur during the a.m. peak hour and 10 percent of the trips on that day occur during the p.m. peak hour, with the exception that most deliveries to the site are not expected to occur late in the day.

** Assumes employees arrive before 7:00 a.m.

Table 5
Peak Hour Project Trip Generation - Passenger Car Equivalents

Vehicle	PCE	A.M. Peak Hour		P.M. Peak Hour	
		Entering	Exiting	Entering	Exiting
Employee automobiles	1.0	0	0	2	10
Ready Mix Concrete Trucks	2.0	32	32	16	16
Aggregate Trucks (incoming sand and gravel for concrete)	3.0	30	30	0	15
Cement Delivery Trucks	3.0	6	6	0	3
Recycled Base Trucks (sales)	3.0	6	6	3	3
Recycled Material End Dumps (Incoming material)	3.0	6	6	3	3
Recycled Material (Incoming material)	2.0	2	2	0	0
HMA Trucks	3.0	24	24	12	12
Aggregate Trucks (incoming sand and gravel for HMA)	3.0	24	24	0	12
Oil Delivery Trucks	3.0	3	3	0	0
Propane Delivery Trucks	3.0	3	3	0	0
Fuel Trucks (diesel for on-site vehicle operations)	3.0	0	0	0	0
Outside Services	1.5	2	2	0	0
Other Materials/Services	1.5	2	2	0	0
TOTAL:		**140**	**140**	**36**	**74**

9.0 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of Project trips was estimated based on the locations of complementary land uses, available routes, and engineering judgment. The percentage distribution of Project trips is presented in the attached Figure 5, Project Trip Distribution Percentages. The peak-hour Project traffic volumes presented in Table 5 were assigned to the adjacent road network in accordance with the trip distribution percentages described above. The peak-hour Project traffic volumes are presented in Figure 6, A.M. and P.M. Peak Hour Project Traffic Volumes. The peak-hour Project traffic volumes in terms of PCE are presented in Figure 7, A.M. and P.M. Peak Hour Project Traffic Volumes – Passenger Car Equivalents.

10.0 EXISTING-PLUS-PROJECT TRAFFIC VOLUMES

The existing-plus-Project peak-hour turning movement volumes are presented in Figure 8, Existing-Plus-Project Peak-Hour Traffic Volumes. The existing-plus-Project peak-hour turning movement volumes in terms of passenger car equivalents for Project trips are presented in Figure 9, Existing-Plus-Project Peak-Hour Traffic Volumes – Passenger Car Equivalents.

11.0 CUMULATIVE YEAR 2040 TRAFFIC VOLUMES

The Tulare County Association of Governments (TCAG) maintains a travel model that is typically used to forecast future traffic volumes. An increment method was utilized to forecast traffic volumes for future conditions by determining the growth projected by the model between the base year and the analysis year. This growth is added to the existing traffic volumes and the result is the predicted future traffic volume on the road segment. The TCAG travel model data output is included in the attached Appendix B. In some cases, the travel model may project growth that is equivalent to less than one percent per year. For purposes of this study, a minimum annual growth rate of one percent was maintained for traffic traveling west of SR 99. Traffic expected to be generated by the Sequoia Gateway Commerce Park (SGCP) project east of SR 99 was obtained from the SGCP DEIR and included in the cumulative traffic volume projections.

Future turning movements forecasts were based on the methods presented in Chapter 8 of the Transportation Research Board National Cooperative Highway Research Program Report 255 entitled *"Highway Traffic Data for Urbanized Area Project Planning and Design."*

The cumulative year 2040 traffic volumes with the Project are presented in Figure 10, Year 2040 Cumulative With-Project Peak-Hour Traffic Volumes. The cumulative year 2040 traffic volumes with the Project PCE volumes are presented in Figure 11, Year 2040 Cumulative With-Project Peak-Hour Traffic Volumes – Passenger Car Equivalents.

12.0 INTERSECTION ANALYSES

12.1 Operational Analyses

The levels of service at the study intersections were determined using the computer program Synchro 9, which is based on the *Highway Capacity Manual* procedures for calculating levels of service. The intersection analysis sheets are included in the attached Appendix C.

Tables 6 through 8 present the results of the intersection analyses. Delays and levels of service worse than the target LOS are indicated in bold type.

Table 6
Intersection LOS Summary – Existing Conditions

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Ave 280 / Rd 68	All-way stop	8.7	A	8.4	A
Ave 280 / SR 99 SB	One-way stop	21.7	C	20.0	C
Ave 280 / Dr 85B / Dr 88	All-way stop	13.5	B	11.5	B
SR 99 NB / Dr 88	One-way stop	12.7	B	11.4	B

Table 7
Intersection LOS Summary – Existing-Plus-Project Conditions

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Ave 280 / Rd 68	All-way stop	9.0	A	8.5	A
Ave 280 / SR 99 SB	One-way stop	**36.5**	**E**	24.0	C
Ave 280 / Dr 85B / Dr 88	All-way stop	18.1	C	12.4	B
SR 99 NB / Dr 88	One-way stop	14.5	B	11.8	B

Table 8
Intersection LOS Summary – Cumulative 2040 With-Project Conditions

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Ave 280 / Rd 68	All-way stop	11.2	B	9.9	A
Ave 280 / SR 99 SB	Signals	19.2	B	24.3	C
Ave 280 / SR 99 NB	Signals	10.3	B	26.7	C

12.2 Queuing Analyses

The results of the intersection operational analyses include estimates of the 95th-percentile queue lengths at the study intersections. The existing storage capacity and the calculated 95th-percentile queue lengths are presented in Tables 9 through 11.

Table 9
Intersection Queuing Summary – Existing Conditions

Intersection		Storage and Queue Length (feet)											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ave 280 / Rd 68	Storage	S	*	S	S	*	S	S	*	S	S	*	S
	A.M.		13			25			13			13	
	P.M.		13			15			10			10	
Ave 280 / SR 99 SB	Storage	DNE	*	S	S	600	DNE	DNE	DNE	DNE	S	*	S
	A.M.		DNS			10						50	
	P.M.		DNS			8						65	
Ave 280 / Dr 88 / Dr 85B	Storage	S	650	S	S	*	S	S	200	25	S	*	40
	A.M.		63			95			28	23		0	3
	P.M.		65			53			10	20		3	3
SR 99 NB / Dr 88	Storage	DNE	875	S	S	220	DNE	*	DNE	S	DNE	DNE	DNE
	A.M.		DNS			5		15					
	P.M.		DNS			3		15					

All lengths are reported in feet.
S = Shared with adjacent lane DNE = Does not exist Does not stop
* Nearest major intersection is greater than 1,000 feet away.

Table 10
Intersection Queuing Summary – Existing-Plus-Project Conditions

Intersection		Storage and Queue Length (feet)											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ave 280 / Rd 68	Storage	S	*	S	S	*	S	S	*	S	S	*	S
	A.M.		15			30			13			13	
	P.M.		15			18			10			10	
Ave 280 / SR 99 SB	Storage	DNE	*	S	S	600	DNE	DNE	DNE	DNE	S	*	S
	A.M.		DNS			13						110	
	P.M.		DNS			8						83	
Ave 280 / Dr 88 / Dr 85B	Storage	S	650	S	S	*	S	S	200	25	S	*	40
	A.M.		118			138			60	25		0	3
	P.M.		80			58			13	20		3	3
SR 99 NB / Dr 88	Storage	DNE	875	S	S	220	DNE	*	DNE	S	DNE	DNE	DNE
	A.M.		DNS			5		20					
	P.M.		DNS			3		15					

All lengths are reported in feet.
S = Shared with adjacent lane DNE = Does not exist Does not stop
* Nearest major intersection is greater than 1,000 feet away.

Table 11
Intersection Queuing Summary – Cumulative 2040 With-Project Conditions

Intersection		Storage and Queue Length (feet)											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ave 280 / Rd 68	Storage	S	*	S	S	*	S	S	*	S	S	*	S
	A.M.		33			60			28			23	
	P.M.		28			38			15			15	
Ave 280 / SR 99 SB	A.M.		245		217	79					276	246	
	P.M.		264		319	109					444	434	
Ave 280 / SR 99 NB	A.M.		183	34		154	43		156	127			
	P.M.		421	42		282	98		354	353			

All lengths are reported in feet.
S = Shared with adjacent lane
* Nearest major intersection is greater than 1,000 feet away.

12.3 Traffic Signal Volume Warrants

The California State Transportation Agency and California Department of Transportation *California Manual on Uniform Traffic Control Devices, 2014 Edition (Revision 3 dated March 9, 2018)* (CMUTCD) presents various criteria (warrants) for determining the need for traffic signals. The CMUTCD states that an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.

The CMUTCD provides the following warrants to investigate the need for a traffic control signal, as applicable:

Warrant 1, Eight-Hour Vehicular Volume.
Warrant 2, Four-Hour Vehicular Volume.
Warrant 3, Peak Hour.
Warrant 4, Pedestrian Volume.
Warrant 5, School Crossing.
Warrant 6, Coordinated Signal System.
Warrant 7, Crash Experience.
Warrant 8, Roadway Network.
Warrant 9, Intersection Near a Grade Crossing

If one or more of the signal warrants is met, signalization of the intersection may be appropriate. However, a signal should not be installed if none or few of the warrants are met since the installation of signals may increase delays on the previously-uncontrolled major street and may contribute to an increase in accidents.

The installation of a traffic signal can serve as a mitigation measure when a significant impact is identified at an unsignalized intersection and traffic signal warrants are satisfied. If warrants are not satisfied, traffic signals would not be considered as a feasible mitigation measure.

This report includes analysis of traffic signal volume warrants at four intersections. The warrant analysis focused on Warrants 1, 2, and 3; the warrant worksheets are presented in Appendix D. The traffic counts revealed no significant pedestrian volumes; therefore, by inspection Warrant 4 is not met and warrant worksheets are not presented for Warrant 4.

Table 12 summarizes the traffic signal warrants studies.

Table 12
Traffic Signal Warrants Summary – Existing Conditions

Intersection	Warrant 1	Warrant 2	Warrant 3	Warrant 4
Ave 280 / Rd 68	Not Met	Not Met	Not Met	Not Met
Ave 280 / SR 99 SB	Not Met	Not Met	Not Met	Not Met
Ave 280 / Dr 85B / Dr 88	Met	Met	Met	Not Met
SR 99 NB / Dr 88	Not Met	Not Met	Not Met	Not Met

The results of the warrants analyses indicate that the intersection of Avenue 280, Drive 85, and Drive 88 is currently a candidate for signalization based on single-lane approaches. If Avenue 280 is widened such that there are two lanes on the eastbound and westbound approaches, traffic signals are not yet warranted. Traffic signals are not expected to be justified at the other study intersections based on the existing conditions.

13.0 DISCUSSION

13.1 Existing Conditions

The intersection analyses indicate that the study intersections are currently operating at acceptable levels of service with adequate storage capacity for the calculated 95th-percentile queues.

13.2 Existing-Plus-Project Conditions

The existing-plus-Project conditions analyses represent conditions that would occur after construction of the Project in the absence of other pending projects and regional growth. This scenario isolates the specific impacts of the Project.

The results of the analyses indicate the Project would cause the intersection of Avenue 280 and the SR 99 southbound ramps to operate at LOS E during the a.m. peak hour. This is a significant impact. Interchange reconstruction is in the design phase and is programmed with an identified funding source. The pending reconstruction is expected to mitigate the significant impact. With implementation of the interchange reconstruction the intersection would operate at acceptable levels of service. Tables 13 and 14 present the results of mitigated analyses. The mitigated intersection analysis sheets are included in Appendix E. It is noted that the impact will remain significant and unavoidable until the interchange reconstruction is complete in approximately 2024.

The other study intersections will continue to operate at acceptable levels of service with adequate storage capacity for the calculated 95th-percentile queues.

Table 13
Mitigated Intersection LOS Summary – Existing-Plus-Project Conditions

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Ave 280 / SR 99 SB	Signals	9.1	A	9.0	A

Table 14
Intersection Queuing Summary – Existing-Plus-Project Conditions

Intersection		Storage and Queue Length (feet)											
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Ave 280 / SR 99 SB	A.M.		55		35	27					61	34	
	P.M.		45		26	14					56	53	

All lengths are reported in feet.

13.3 Cumulative Year 2040 With-Project Conditions

The year 2040 with-Project conditions analyses include the assumption that the Project site is developed with the proposed Project and that reconstruction of the SR 99 / Caldwell Avenue (Avenue 280) interchange has been completed. This scenario estimates the long-term cumulative impacts. The Project may be responsible for an equitable share of the interchange improvements if the interchange is not fully funded considering the significant impacts identified in the existing-plus-Project scenario.

The study intersections are expected to operate at acceptable levels of service with the proposed Project and interchange reconstruction through the year 2040.

14.0 EQUITABLE SHARE CALCULATIONS

Where required cumulative mitigation measures are not included in a traffic impact fee to be paid by the Project, the Project's financial responsibility for the mitigation measures can be determined based on equitable share calculations. Caltrans recommends the following equation as presented in the Caltrans *Guide for the Preparation of Traffic Impact Studies* to determine a project's equitable share of the cost of improvements to State facilities:

$$P = \frac{T}{T_B - T_E}$$

where:

P = The equitable share of the Project's traffic impact;
T = The Project trips generated during the peak hour of the adjacent State Highway facility;
T_B = The forecasted (2040 cumulative with project) traffic volume on the impacted State highway facility;
T_E = The existing traffic on the State Highway facility plus approved projects traffic.

It is anticipated that construction costs and interchange volumes to be presented in SR 99 / Caldwell Avenue interchange reconstruction DEIR will be utilized by Caltrans to develop equitable share calculations resulting in a per-trip fee that may be applied equitably to all development projects contributing trips to the interchange. Table 15 presents the volume of trips expected to be generated by the proposed Project at the interchange.

Table 15
Project Trip Trace Values – SR 99 / Caldwell Avenue Interchange

Movement	A.M. Peak Hour Volume	P.M. Peak Hour Volume
EB Caldwell to NB 99	19	12
EB Caldwell past 99	11	7
EB Caldwell to SB 99	19	12
WB Caldwell to NB 99	0	0
EB Caldwell past 99	11	3
WB Caldwell to SB 99	0	0
SB 99 to EB Caldwell	0	0
SB 99 to WB Caldwell	19	5
NB 99 to EB Caldwell	0	0
NB 99 to WB Caldwell	19	6

15.0 CONCLUSIONS

Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to be generated by the Project, to analyze the existing traffic conditions, and to analyze the traffic conditions projected to occur in the future.

The study intersections are currently operating at acceptable levels of service with adequate storage capacity for the calculated 95^{th}-percentile queues.

The proposed Project will cause a significant impact by decreasing the LOS at the intersection of Avenue 280 and the SR 99 southbound ramps to E during the a.m. peak hour.

Tulare County and the Tulare County Association of Governments have initiated an interchange reconstruction project at the SR 99 / Caldwell Avenue (Avenue 280) interchange that will mitigate the Project impact to a less than significant level. Caltrans is managing the project through a reimbursement agreement and plans to circulate a Draft Environmental Impact Report (DEIR) in October/November of 2018. The interchange reconstruction is programmed and has an identified funding source. The reconstruction is planned to be complete by 2024. The impact would remain significant and unavoidable until the interchange reconstruction is complete.

The study intersections are expected to operate at acceptable levels of service with the proposed Project and interchange reconstruction through the year 2040.

To mitigate its share of the impacts to the interchange, the Project may be responsible for an equitable share of any unfunded portions of the interchange project.

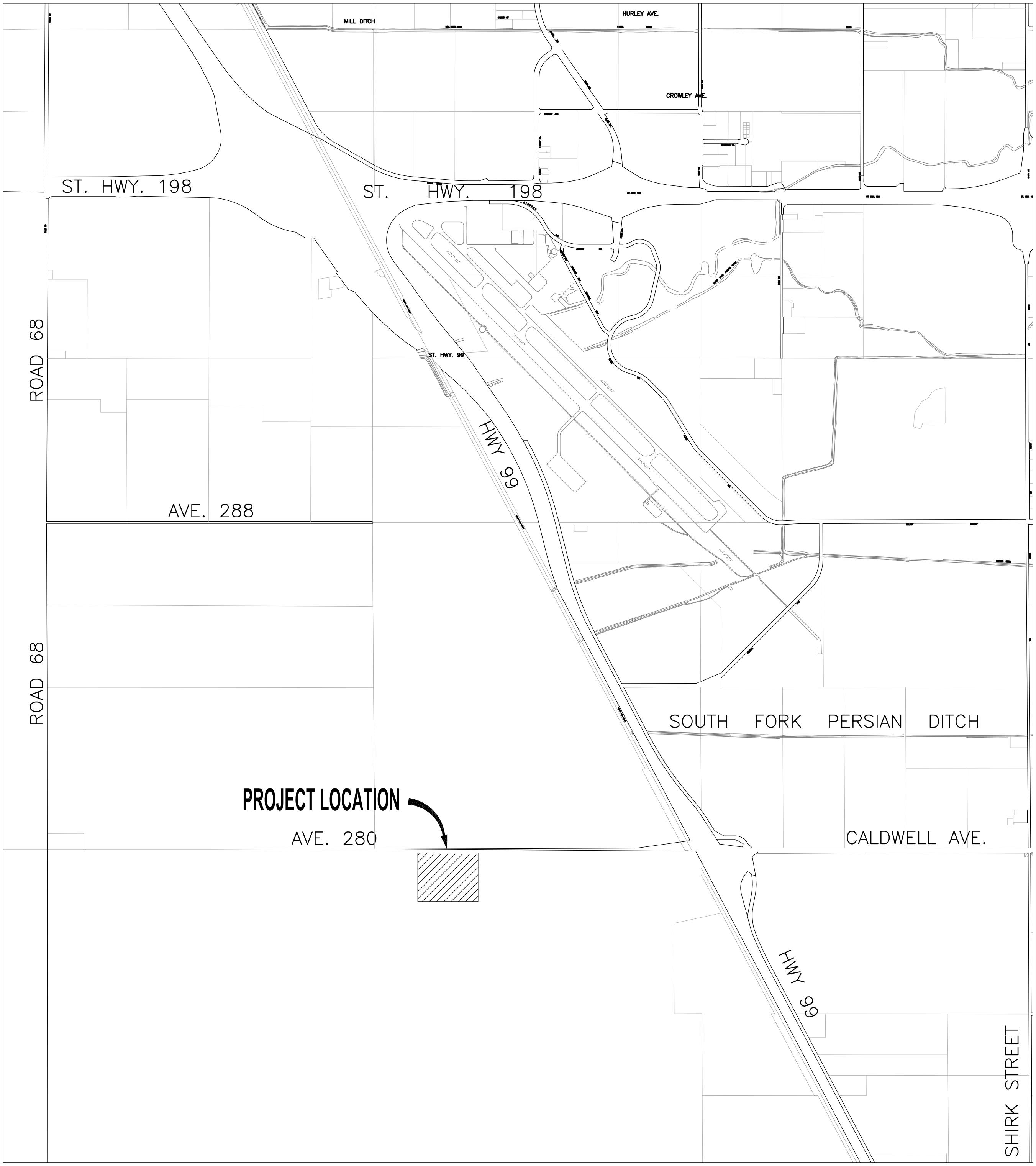
Thank you for the opportunity to perform this traffic impact study. Please feel free to contact our office if you have any questions.

PETERS ENGINEERING GROUP

John Rowland, PE, TE

Attachments: Figures 1 through 11
Appendix A - Traffic Count Data Sheets
Appendix B - Tulare County Travel Model
Appendix C - Intersection Analysis Sheets
Appendix D – Traffic Signal Warrants Worksheets
Appendix E - Mitigated Intersection Analysis Sheets

FIGURES



Proposed Concrete and Asphalt Batch Plant

Tulare County, California

LEGEND

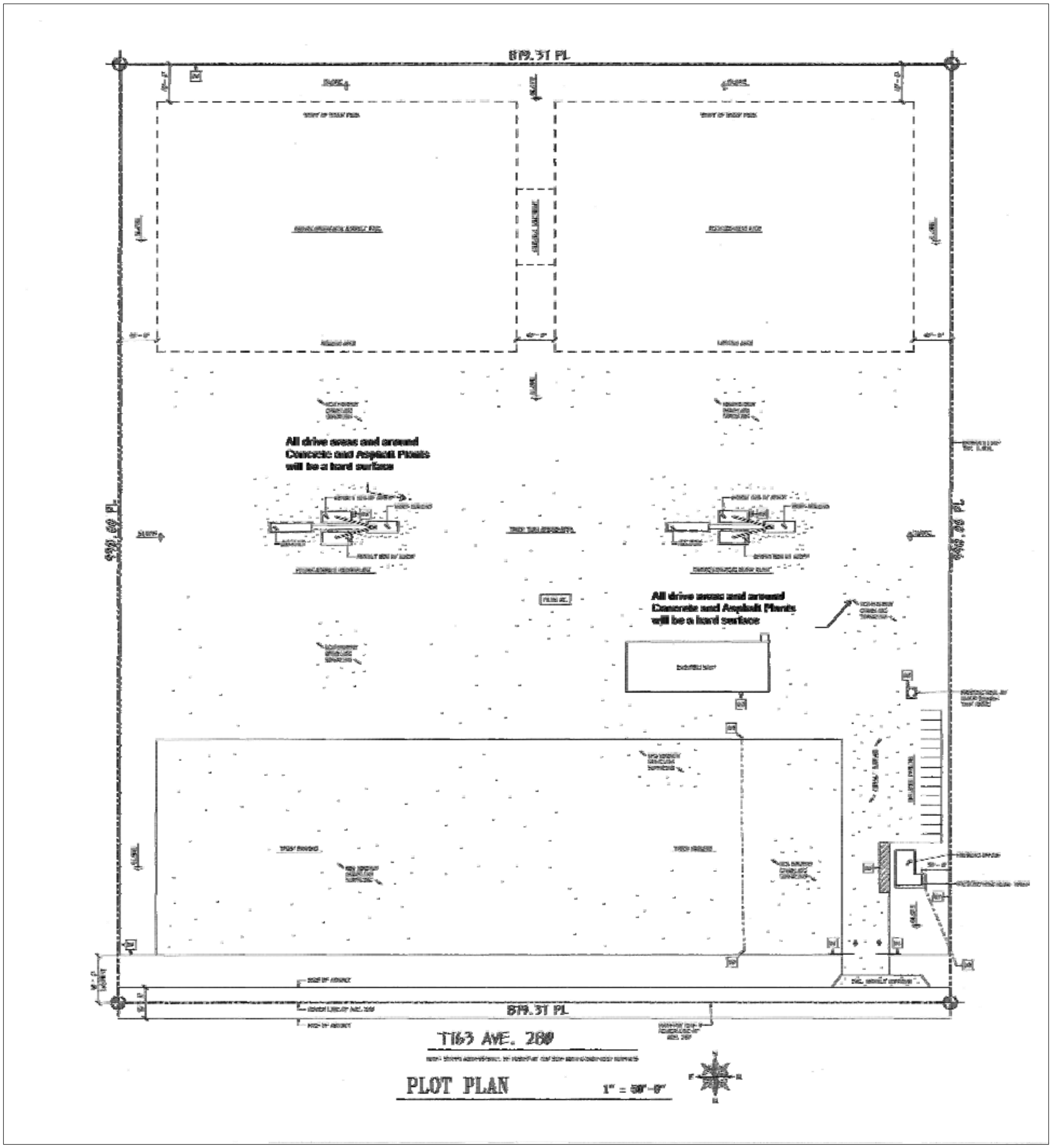
PROJECT SITE

VICINITY MAP

Not to Scale

PETERS ENGINEERING GROUP

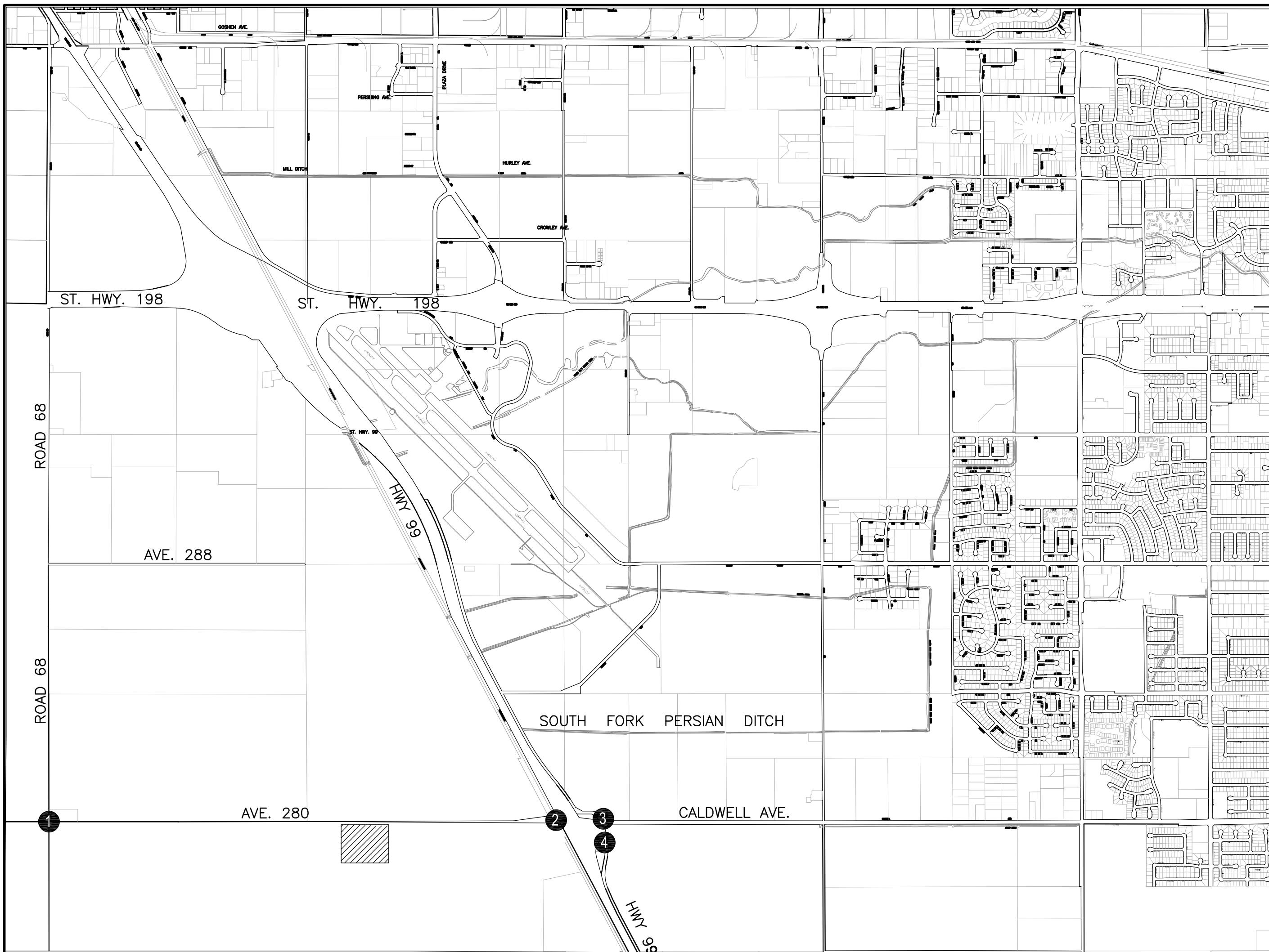
Figure 1

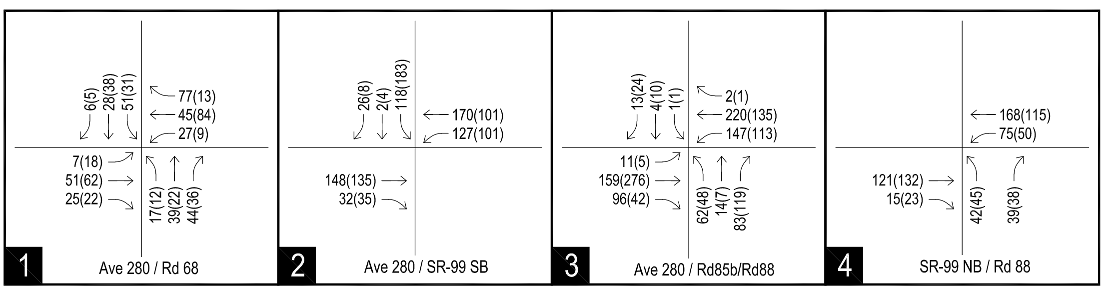


Proposed Concrete and Asphalt Batch Plant
Tulare County, California

SITE PLAN

Not to Scale





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

(YY) - PM Peak Hour Volumes

Proposed Concrete and Asphalt Batch Plant

Tulare County, California

EXISTING PEAK-HOUR TRAFFIC VOLUMES

Not to Scale

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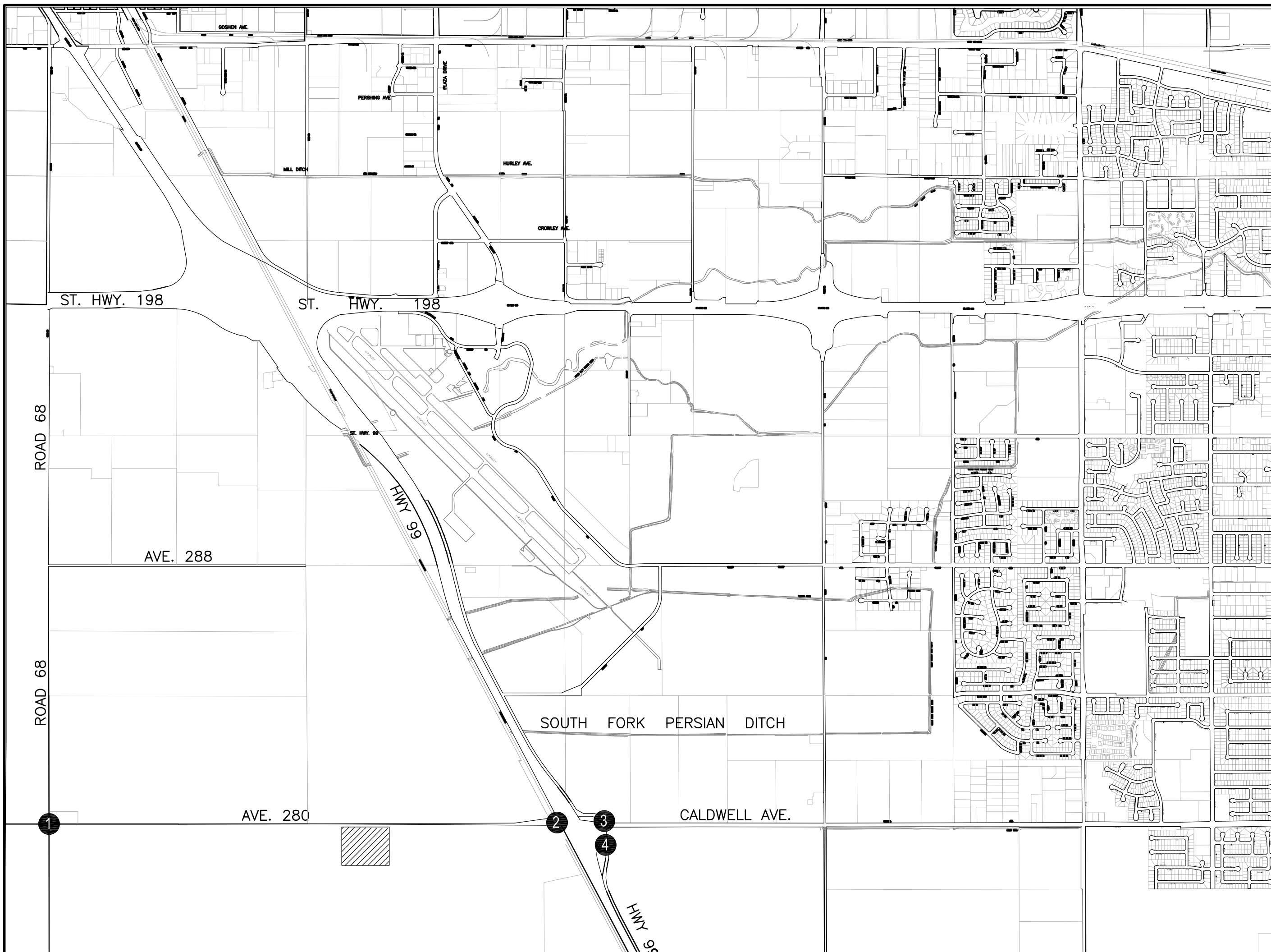
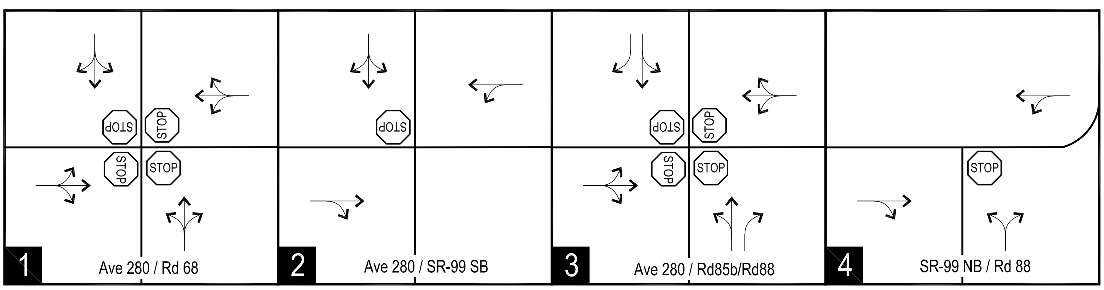
Figure 3





Proposed Concrete and Asphalt Batch Plant

Tulare County, California

LEGEND

- XX STUDY AREA INTERSECTIONS
- PROJECT SITE
- SIGNALIZED INTERSECTION
- STOP STOP SIGN
- DIRECTION OF TRAVEL

EXISTING LANE CONFIGURATIONS AND INTERSECTION CONTROL

Not to Scale

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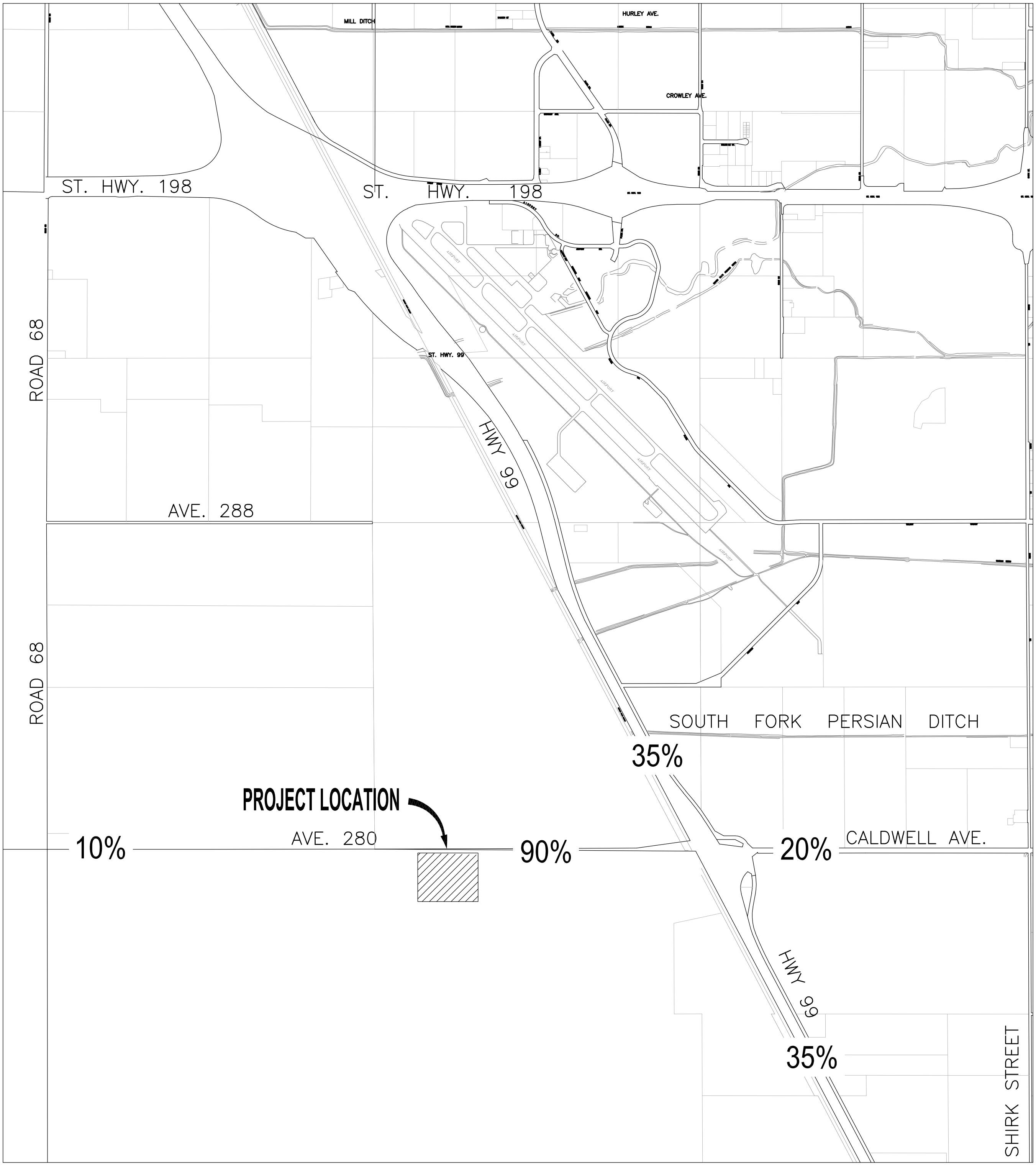
Figure 4



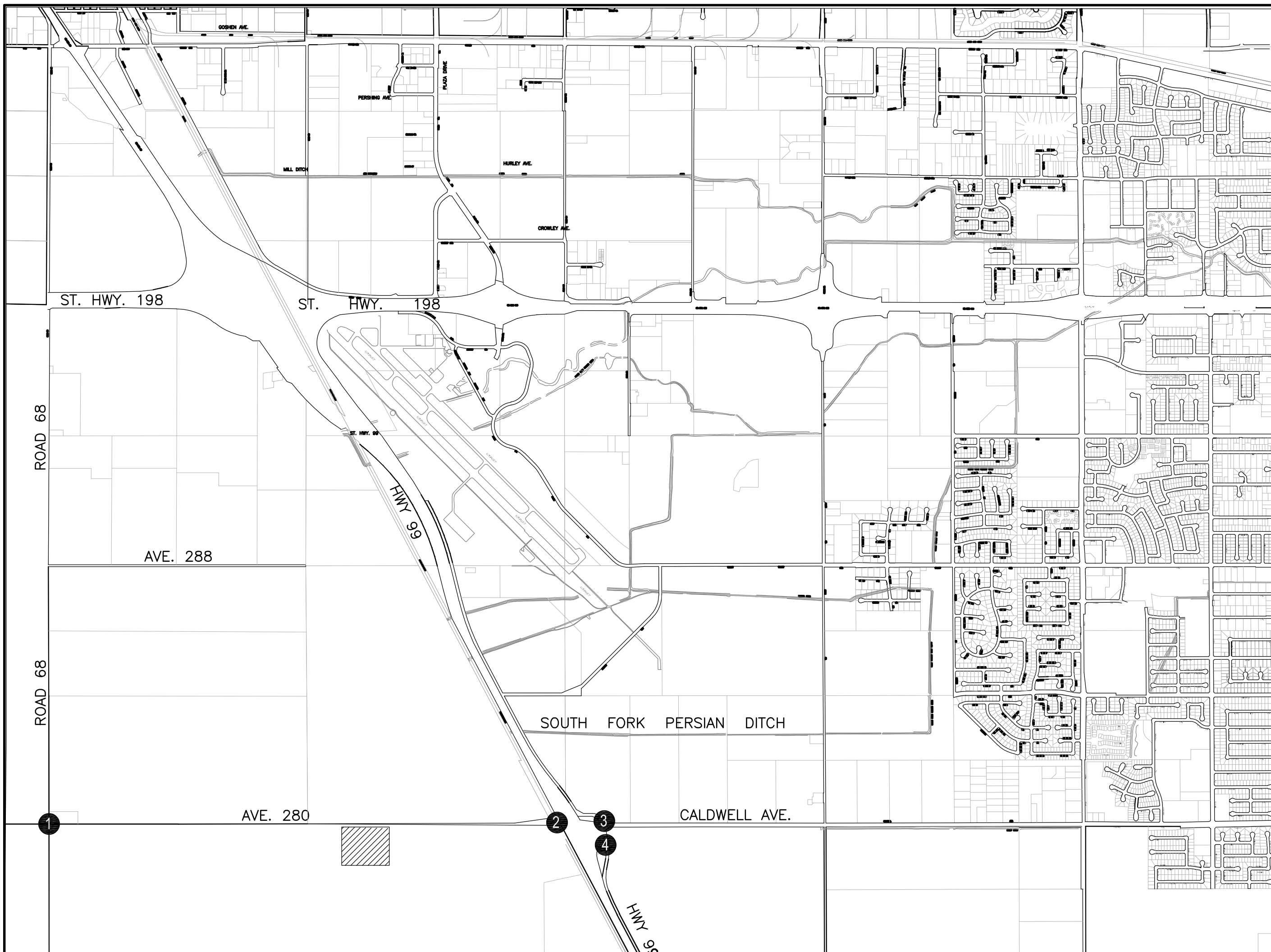
Proposed Concrete and Asphalt Batch Plant
Tulare County, California

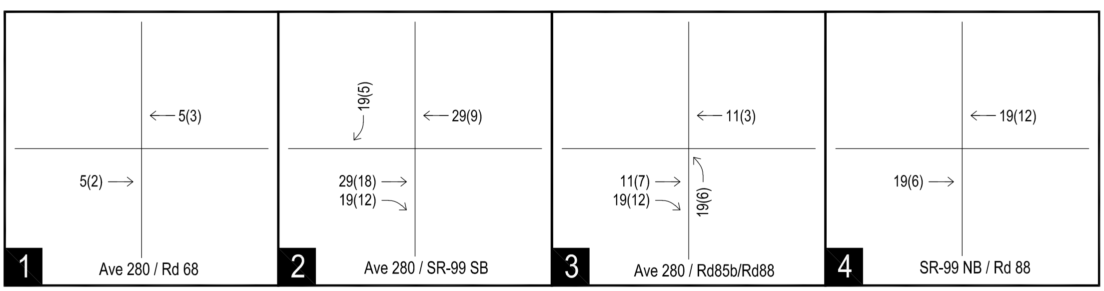
LEGEND

PROJECT SITE

PEAK-HOUR PROJECT TRAFFIC DISTRIBUTION PERCENTAGES

Not to Scale





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

(YY) - PM Peak Hour Volumes

Proposed Concrete and Asphalt Batch Plant

Tulare County, California

PEAK-HOUR PROJECT TRAFFIC VOLUMES

Not to Scale

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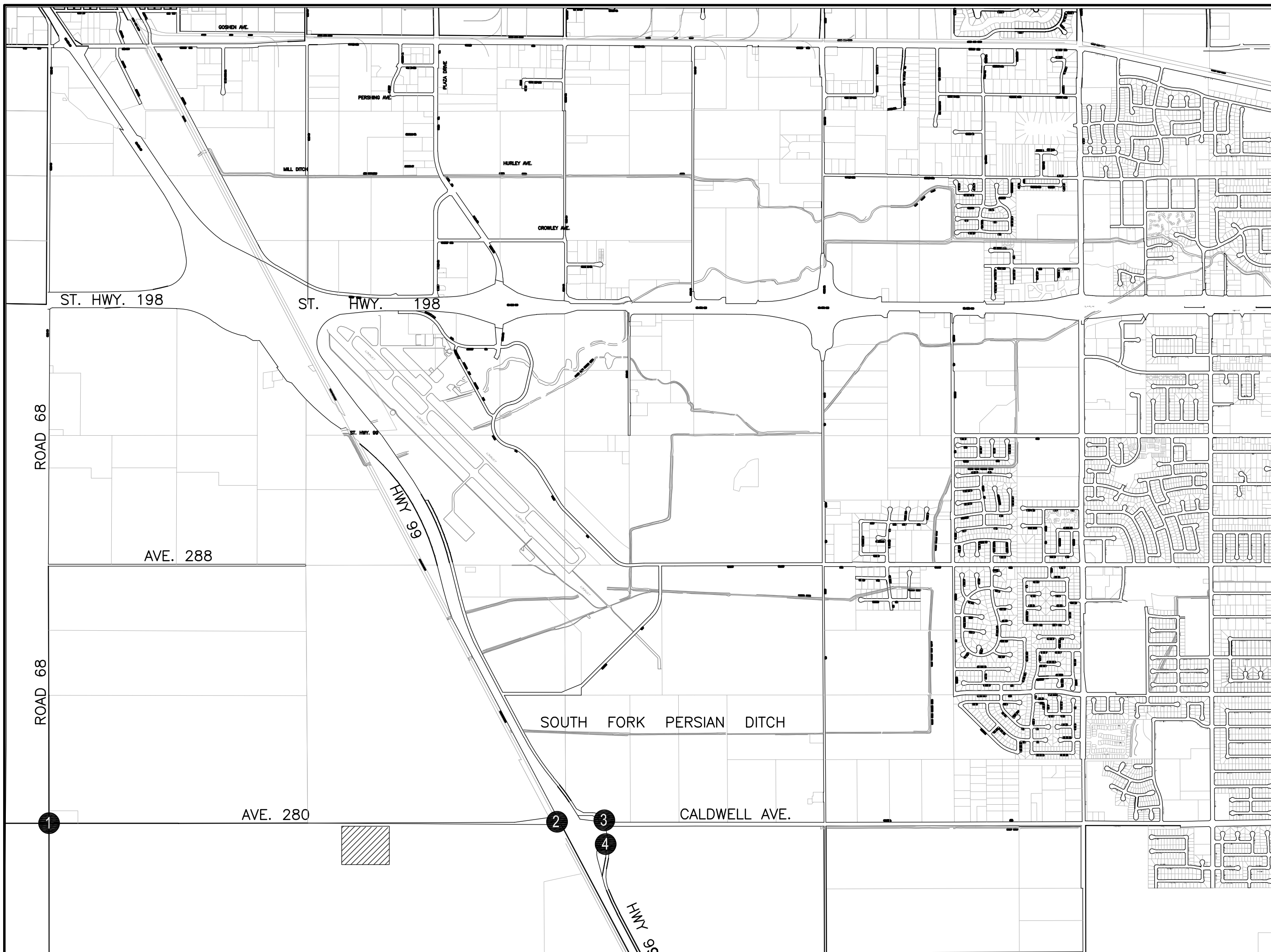
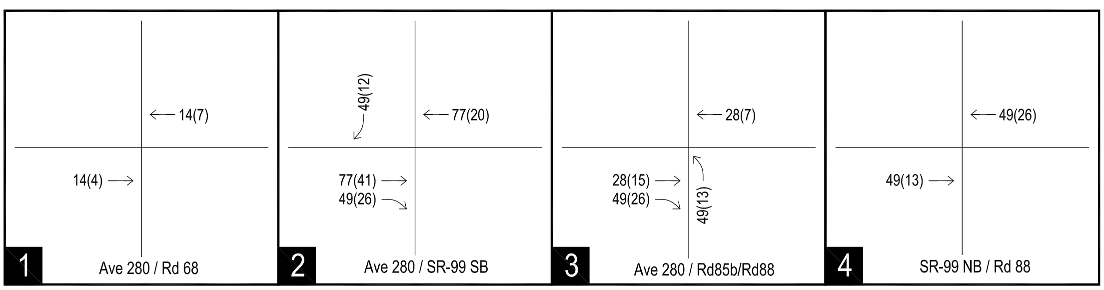
Figure 6





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

(YY) - PM Peak Hour Volumes

Proposed Concrete and Asphalt Batch Plant

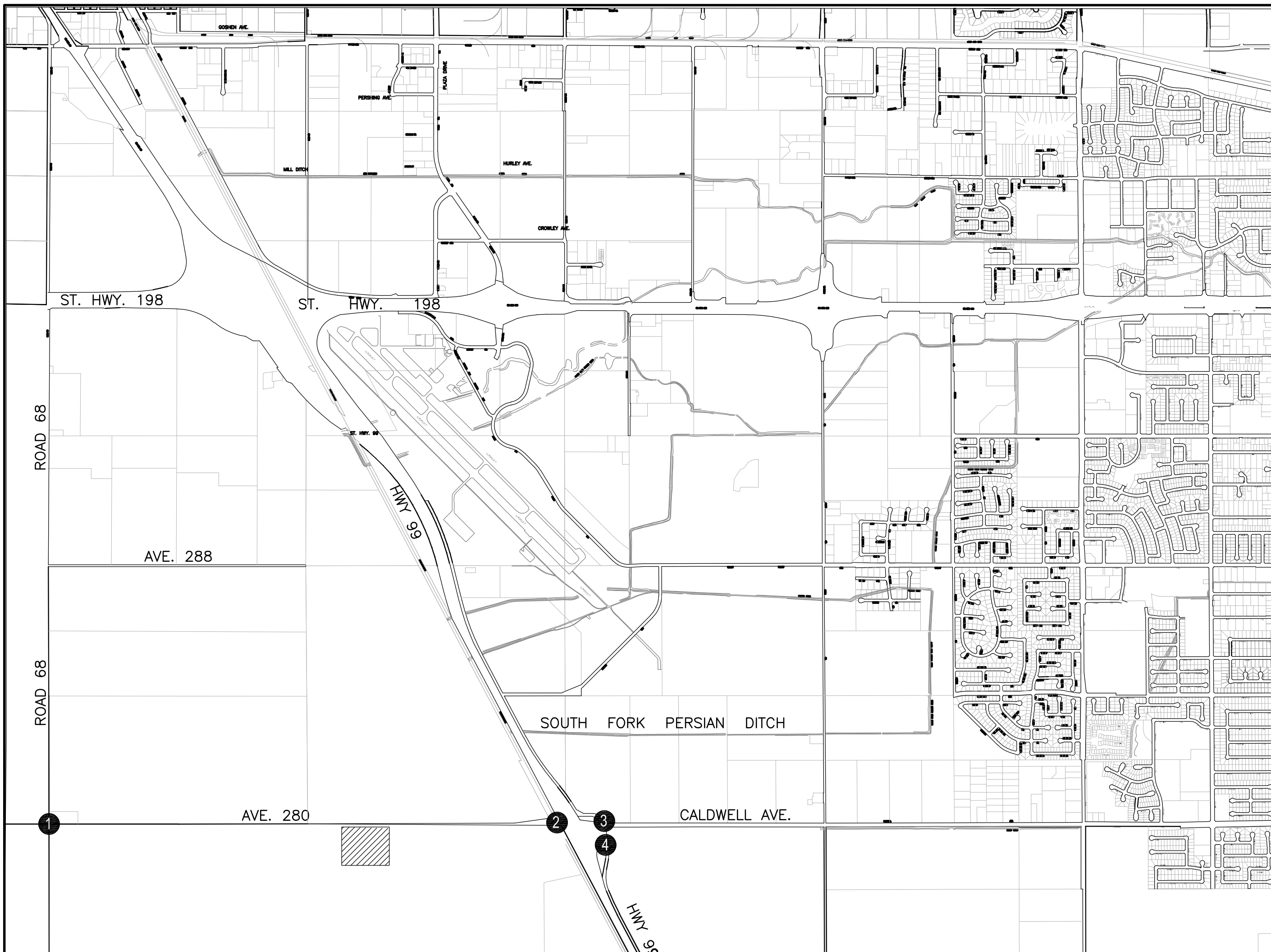
Tulare County, California

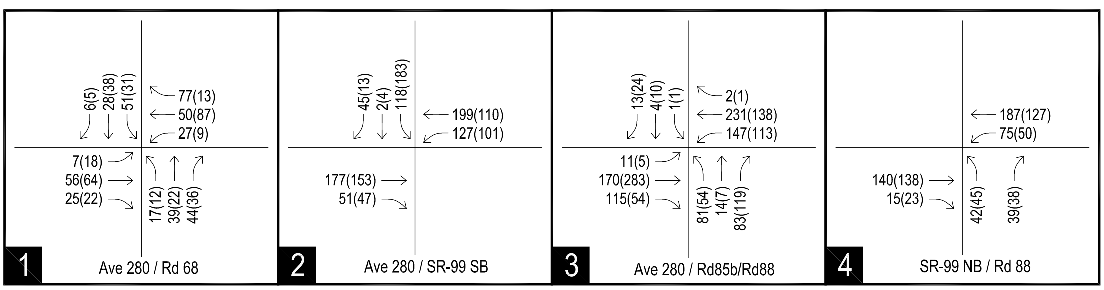
PEAK-HOUR PROJECT TRAFFIC VOLUMES
PASSENGER CAR EQUIVALENTS

Not to Scale

PE Peters Engineering Group

Figure 7





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

(YY) - PM Peak Hour Volumes

Proposed Concrete and Asphalt Batch Plant

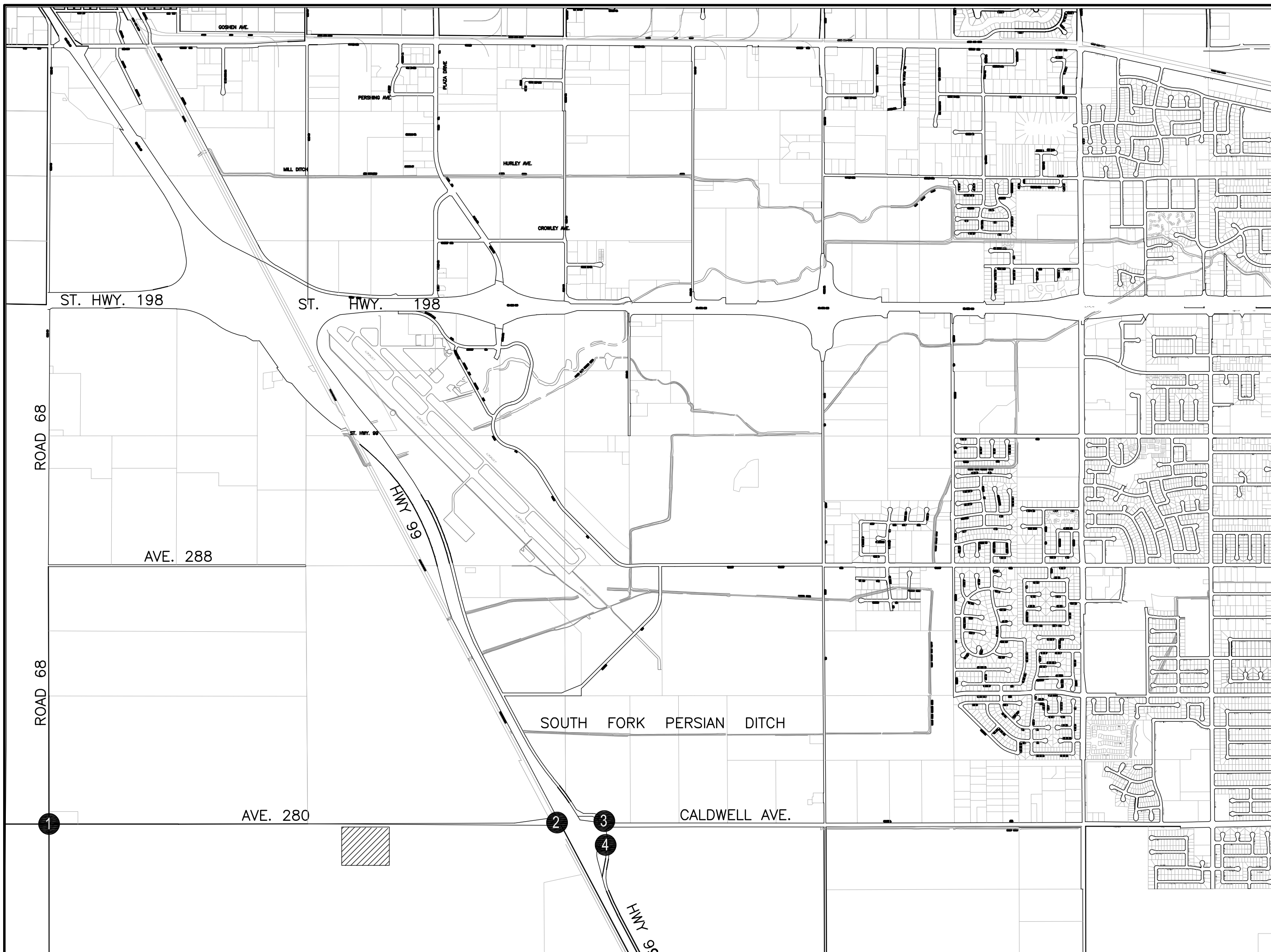
Tulare County, California

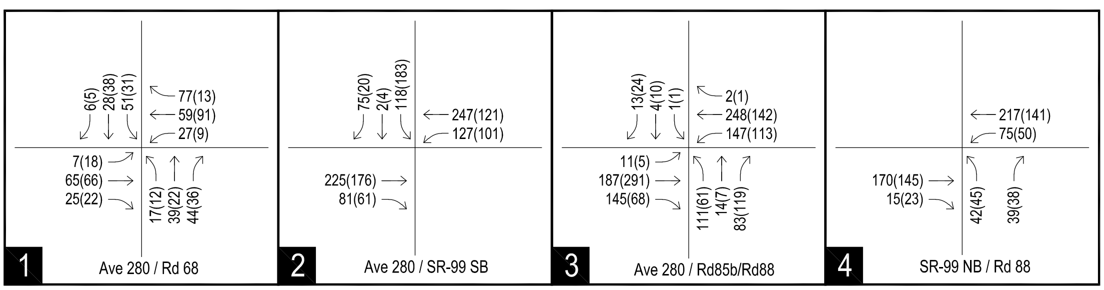
EXISTING PLUS PROJECT PEAK-HOUR TRAFFIC VOLUMES

Not to Scale

PETERS ENGINEERING GROUP

Figure 8





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

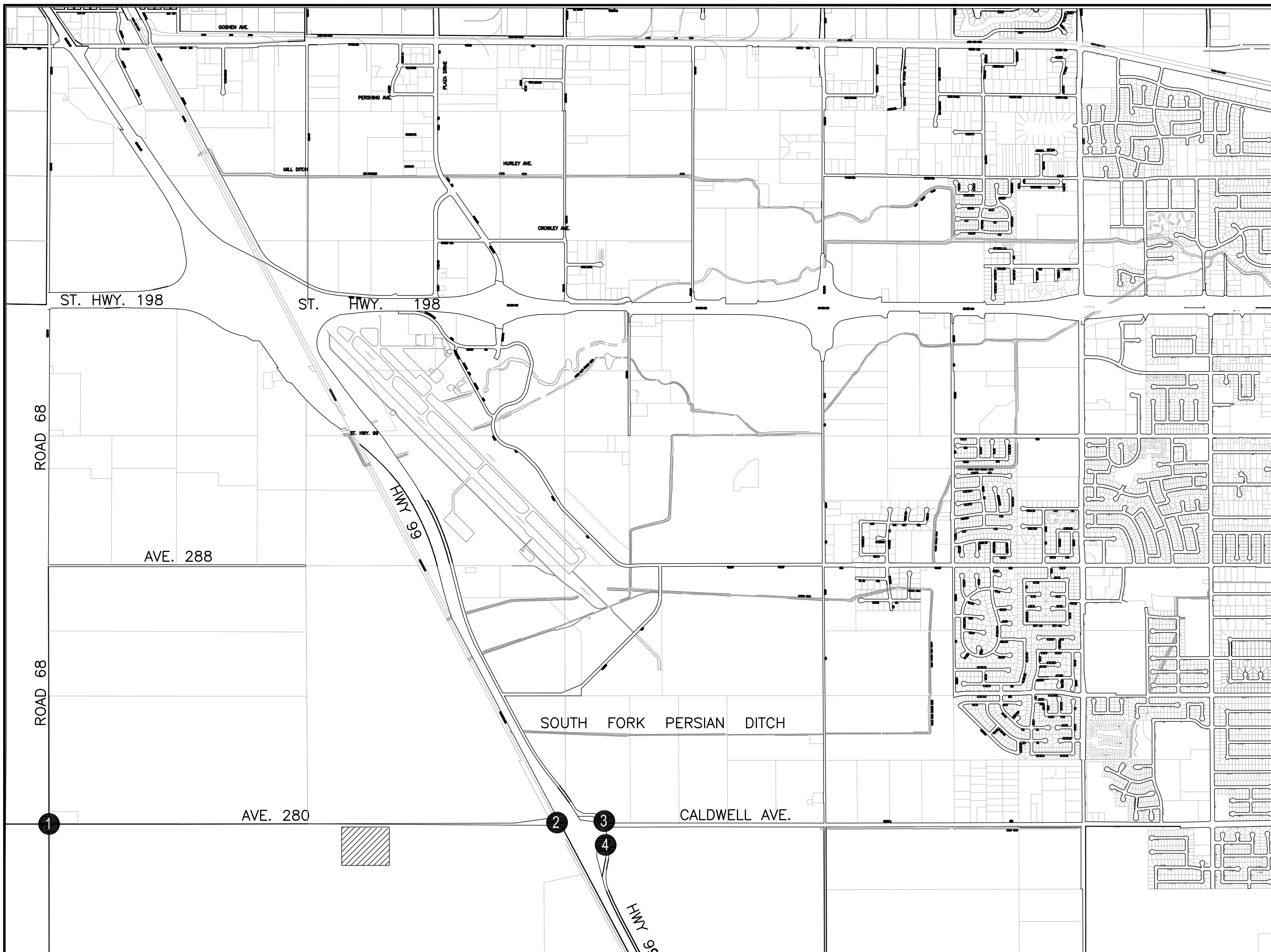
(YY) - PM Peak Hour Volumes

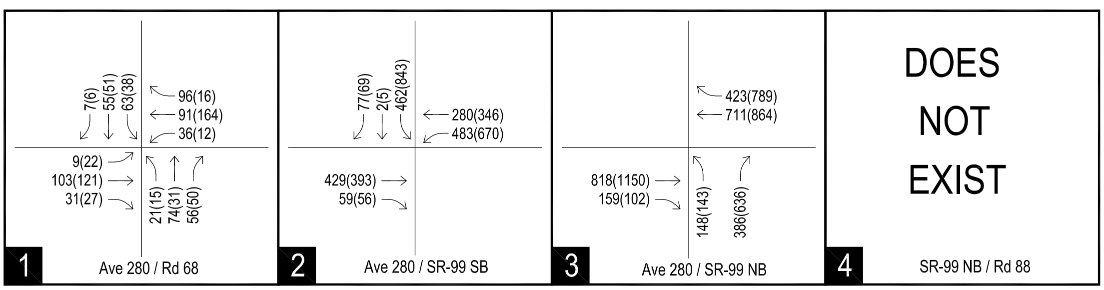
Proposed Concrete and Asphalt Batch Plant

Tulare County, California

EXISTING PLUS PROJECT PEAK-HOUR TRAFFIC VOLUMES
PASSENGER CAR EQUIVALENTS

Not to Scale





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

(YY) - PM Peak Hour Volumes

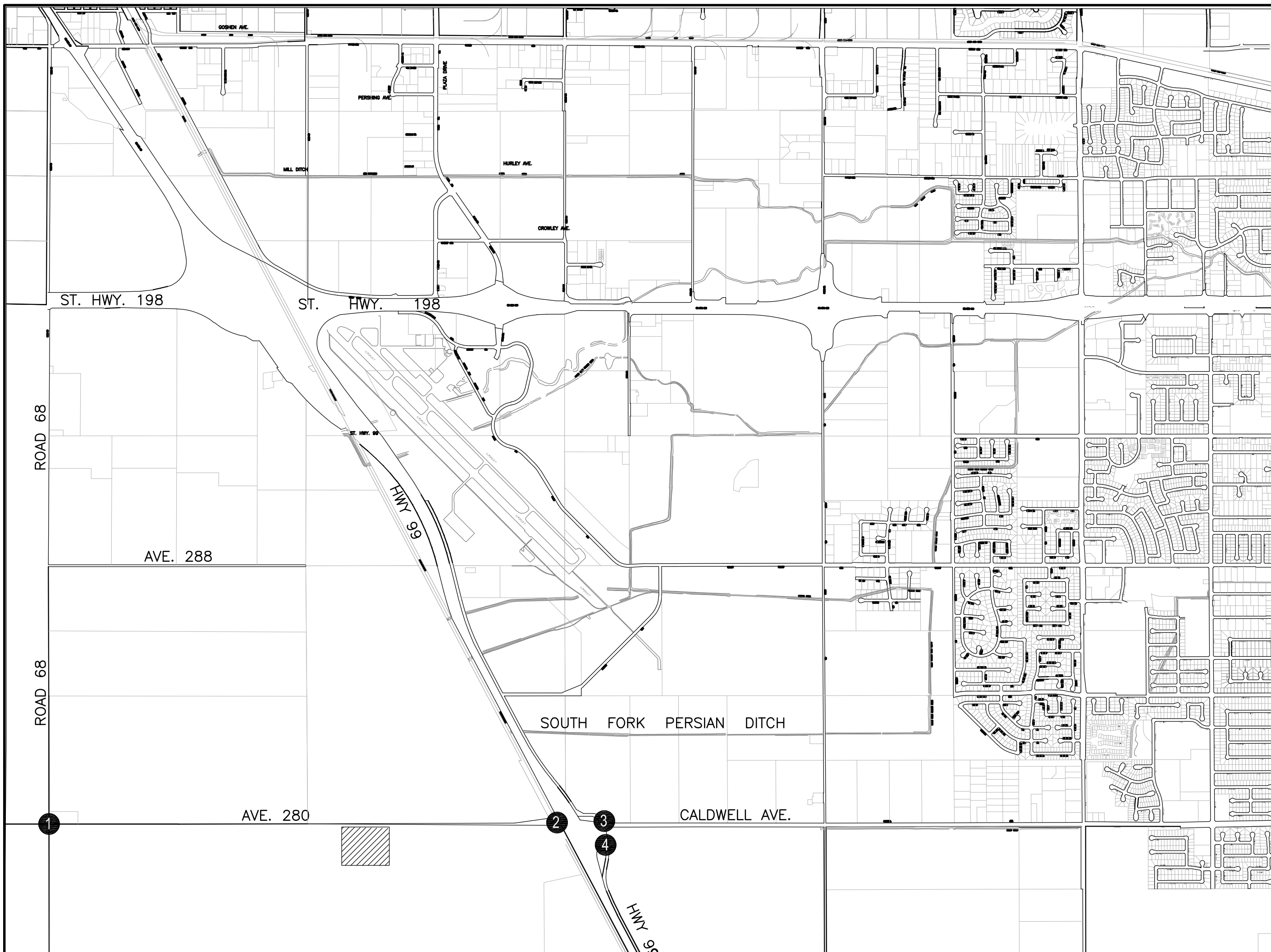
Proposed Concrete and Asphalt Batch Plant

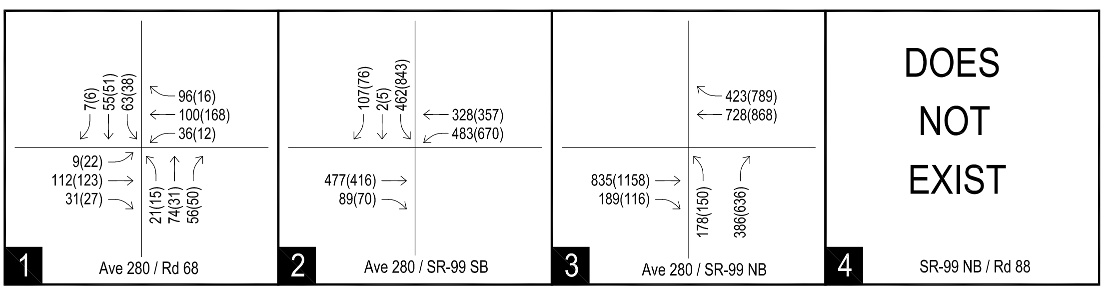
Tulare County, California

CUMULATIVE 2040 WITH PROJECT PEAK-HOUR TRAFFIC VOLUMES

Not to Scale

PETERS ENGINEERING GROUP





LEGEND

XX STUDY AREA INTERSECTIONS

PROJECT SITE

XX - AM Peak Hour Volumes

(YY) - PM Peak Hour Volumes

Proposed Concrete and Asphalt Batch Plant

Tulare County, California

CUMULATIVE 2040 WITH PROJECT PEAK-HOUR TRAFFIC VOLUMES
PASSENGER CAR EQUIVALENTS

Not to Scale

PETERS ENGINEERING GROUP

Figure 11

APPENDIX A

TRAFFIC COUNT DATA SHEETS

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

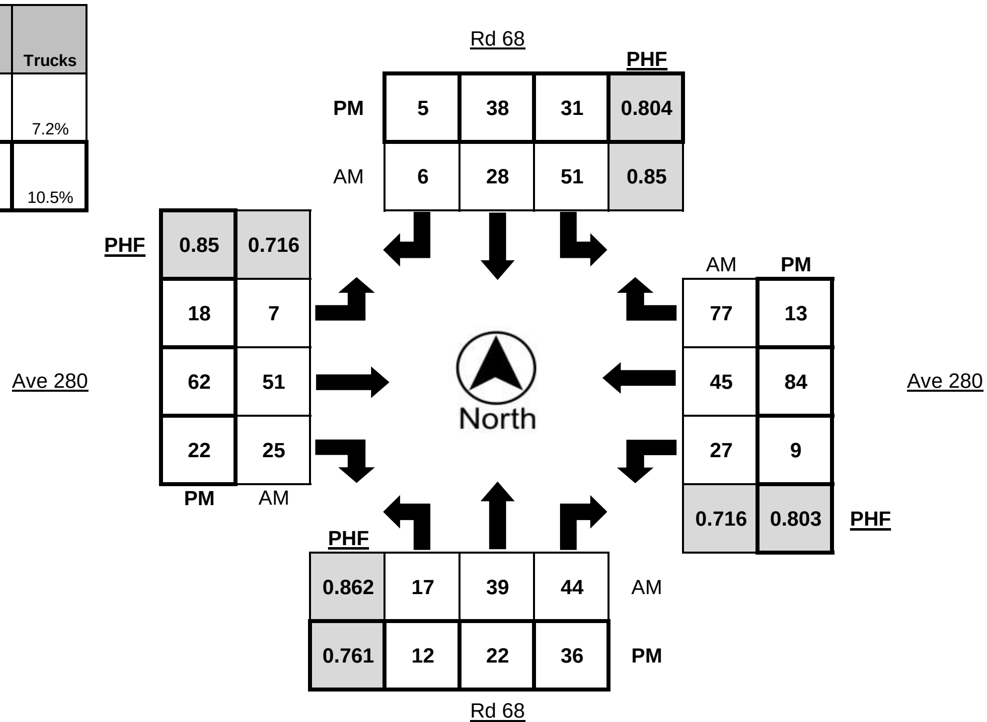
LOCATION Ave 280 @ Rd 68
LATITUDE 36.2979
COUNTY Tulare
LONGITUDE -119.4213
COLLECTION DATE Tuesday, August 28, 2018
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	4	5	4	0	3	2	0	1	2	5	2	2	8	10	5	2
7:15 AM - 7:30 AM	6	3	7	0	7	6	1	1	1	11	7	5	7	12	7	3
7:30 AM - 7:45 AM	4	8	16	1	11	12	1	2	2	9	5	2	6	16	30	2
7:45 AM - 8:00 AM	4	15	10	3	14	9	2	1	3	20	6	2	7	12	18	0
8:00 AM - 8:15 AM	3	13	11	4	19	1	2	0	1	11	7	4	7	5	22	0
8:15 AM - 8:30 AM	2	7	7	3	13	5	0	1	0	11	5	3	5	11	2	1
8:30 AM - 8:45 AM	6	5	6	1	0	5	0	1	2	14	0	2	3	13	4	1
8:45 AM - 9:00 AM	4	4	5	2	1	3	0	2	2	7	1	1	4	9	6	1
TOTAL	**33**	**60**	**66**	**14**	**68**	**43**	**6**	**9**	**13**	**88**	**33**	**21**	**47**	**88**	**94**	**10**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	4	8	6	0	6	15	2	2	3	14	7	7	4	25	2	2
4:15 PM - 4:30 PM	4	7	7	3	9	12	2	3	8	16	6	1	3	25	5	5
4:30 PM - 4:45 PM	4	6	13	7	8	6	1	0	4	19	4	4	0	18	3	1
4:45 PM - 5:00 PM	0	1	10	0	8	5	0	0	3	13	5	1	2	16	3	1
5:00 PM - 5:15 PM	2	4	8	0	17	5	4	3	6	16	5	2	0	15	6	1
5:15 PM - 5:30 PM	3	4	4	1	6	7	2	1	6	8	2	0	0	26	1	2
5:30 PM - 5:45 PM	2	7	6	0	5	5	1	2	1	21	4	0	0	16	3	0
5:45 PM - 6:00 PM	4	4	5	0	3	4	0	0	6	16	6	0	0	17	6	0
TOTAL	**23**	**41**	**59**	**11**	**62**	**59**	**12**	**11**	**37**	**123**	**39**	**15**	**9**	**158**	**29**	**12**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	17	39	44	8	51	28	6	4	7	51	25	13	27	45	77	5
4:00 PM - 5:00 PM	12	22	36	10	31	38	5	5	18	62	22	13	9	84	13	9

	PHF	**Trucks**
AM	0.869	7.2%
PM	0.846	10.5%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

LOCATION Ave 280 @ Rd 68 **LATITUDE** 36.2979

COUNTY Tulare **LONGITUDE** -119.4213

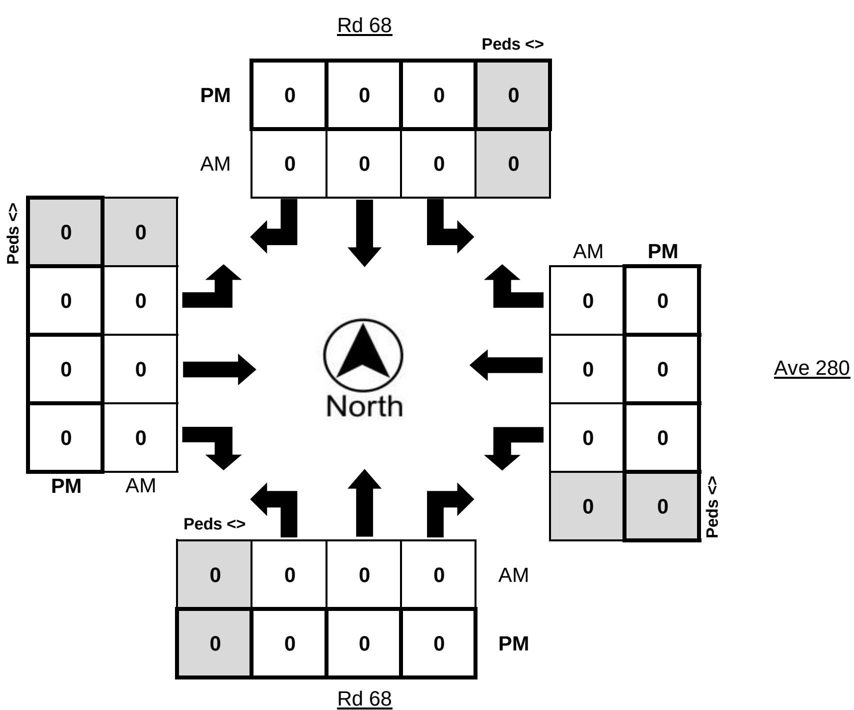
COLLECTION DATE Tuesday, August 28, 2018 **WEATHER** Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**0**



Turning Movement Report

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Prepared For:
Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

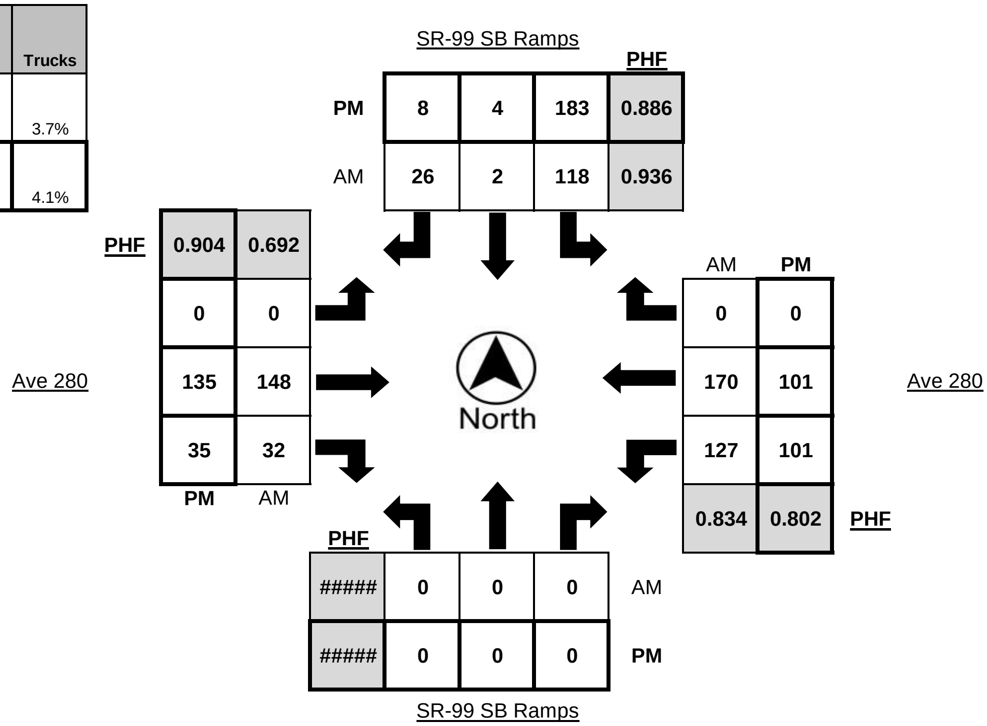
LOCATION	Ave 280 @ SR-99 SB Ramps	**LATITUDE**	36.2982
COUNTY	Tulare	**LONGITUDE**	-119.3853
COLLECTION DATE	Tuesday, August 28, 2018	**WEATHER**	Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	0	0	0	0	22	0	2	2	0	11	2	0	25	19	0	0
7:15 AM - 7:30 AM	0	0	0	0	34	1	4	3	0	21	4	5	32	30	0	5
7:30 AM - 7:45 AM	0	0	0	0	29	0	8	2	0	35	3	1	23	48	0	0
7:45 AM - 8:00 AM	0	0	0	0	29	0	5	0	0	52	13	1	37	52	0	2
8:00 AM - 8:15 AM	0	0	0	0	26	1	9	0	0	40	12	3	35	40	0	1
8:15 AM - 8:30 AM	0	0	0	0	26	1	2	0	0	33	8	2	22	21	0	1
8:30 AM - 8:45 AM	0	0	0	0	26	0	1	0	0	18	7	3	16	20	0	2
8:45 AM - 9:00 AM	0	0	0	0	29	0	1	1	0	17	6	2	24	24	0	2
TOTAL	**0**	**0**	**0**	**0**	**221**	**3**	**32**	**8**	**0**	**227**	**55**	**17**	**214**	**254**	**0**	**13**

	Northbound				Southbound				Eastbound				Westbound			
Time	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
4:00 PM - 4:15 PM	0	0	0	0	43	0	1	0	0	26	11	2	19	26	0	9
4:15 PM - 4:30 PM	0	0	0	0	31	1	2	2	0	37	9	3	13	23	0	1
4:30 PM - 4:45 PM	0	0	0	0	39	4	3	3	0	42	5	3	20	32	0	5
4:45 PM - 5:00 PM	0	0	0	0	48	0	0	2	0	29	9	0	25	20	0	0
5:00 PM - 5:15 PM	0	0	0	0	51	0	4	1	0	30	12	4	39	24	0	0
5:15 PM - 5:30 PM	0	0	0	0	45	0	1	1	0	34	9	2	17	25	0	2
5:30 PM - 5:45 PM	0	0	0	0	53	1	2	2	0	33	10	0	15	25	0	0
5:45 PM - 6:00 PM	0	0	0	0	33	0	1	1	0	19	10	1	19	32	0	2
TOTAL	**0**	**0**	**0**	**0**	**343**	**6**	**14**	**12**	**0**	**250**	**75**	**15**	**167**	**207**	**0**	**19**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:15 AM - 8:15 AM	0	0	0	0	118	2	26	5	0	148	32	10	127	170	0	8
4:30 PM - 5:30 PM	0	0	0	0	183	4	8	7	0	135	35	9	101	101	0	7

	PHF	Trucks
AM	0.828	3.7%
PM	0.886	4.1%



Metro Traffic Data Inc.
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Turning Movement Report

Prepared For:

Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

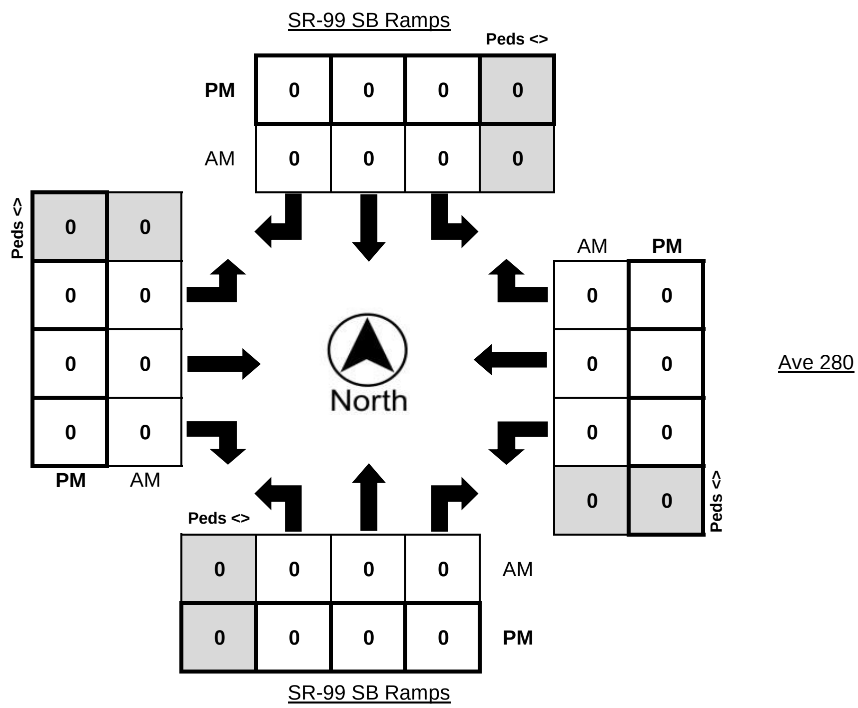
LOCATION Ave 280 @ SR-99 SB Ramps
LATITUDE 36.2982
COUNTY Tulare
LONGITUDE -119.3853
COLLECTION DATE Tuesday, August 28, 2018
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**0**



Metro Traffic Data Inc.
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www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

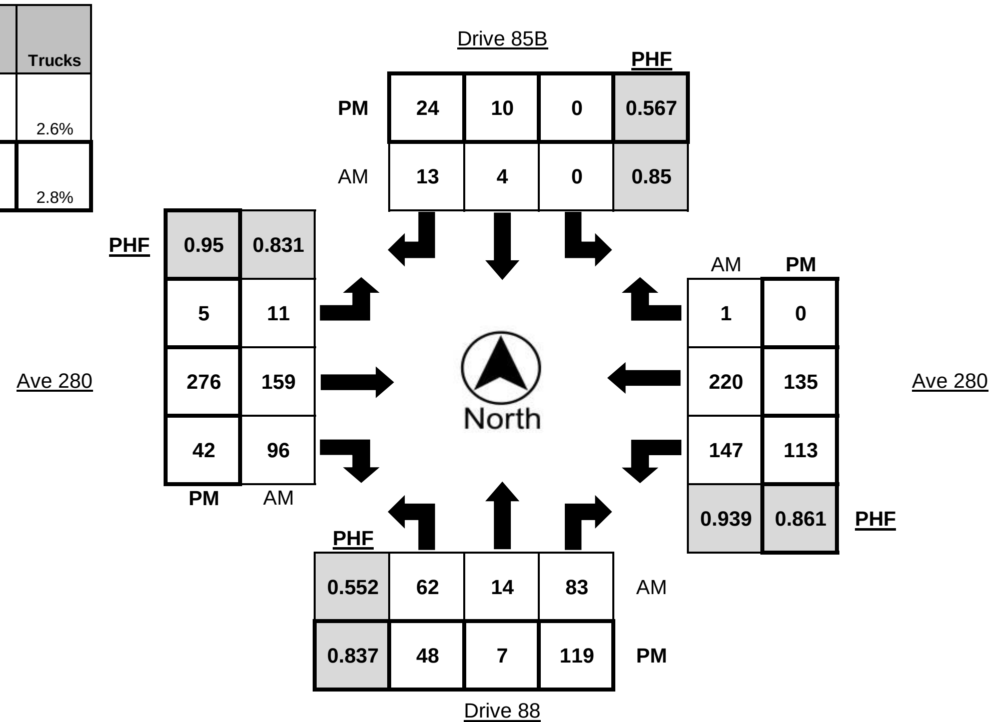
LOCATION	Ave 280 @ Drive 88 / Drive 85B	**LATITUDE**	36.2981
COUNTY	Tulare	**LONGITUDE**	-119.3827
COLLECTION DATE	Tuesday, August 28, 2018	**WEATHER**	Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	7	2	10	1	0	1	3	0	0	19	12	1	40	41	0	2
7:15 AM - 7:30 AM	15	2	8	3	0	2	3	1	1	30	21	4	41	43	0	4
7:30 AM - 7:45 AM	12	1	10	1	0	1	4	0	3	34	28	1	35	63	0	1
7:45 AM - 8:00 AM	17	8	47	1	0	1	3	0	4	49	27	2	35	61	0	0
8:00 AM - 8:15 AM	18	3	18	1	0	0	3	0	3	46	20	0	36	53	1	2
8:15 AM - 8:30 AM	6	1	11	1	0	0	2	0	4	39	16	0	31	34	0	1
8:30 AM - 8:45 AM	8	1	18	0	0	0	3	0	0	37	5	0	23	24	0	1
8:45 AM - 9:00 AM	9	2	18	0	0	0	2	0	0	37	9	2	21	29	0	3
TOTAL	**92**	**20**	**140**	**8**	**0**	**5**	**23**	**1**	**15**	**291**	**138**	**10**	**262**	**348**	**1**	**14**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	17	0	28	9	0	4	1	0	0	61	9	1	28	28	0	2
4:15 PM - 4:30 PM	5	1	28	0	0	0	3	0	1	60	8	4	29	27	2	3
4:30 PM - 4:45 PM	17	1	34	4	0	4	3	0	2	69	9	4	29	34	0	2
4:45 PM - 5:00 PM	8	2	30	0	0	1	4	0	1	63	14	1	23	36	0	2
5:00 PM - 5:15 PM	15	3	29	2	0	3	12	0	1	73	11	3	32	40	0	0
5:15 PM - 5:30 PM	8	1	26	0	0	2	5	1	1	71	8	1	29	25	0	2
5:30 PM - 5:45 PM	12	1	21	0	1	1	3	0	0	69	16	2	30	27	0	4
5:45 PM - 6:00 PM	12	4	21	1	0	0	4	0	1	46	4	1	18	34	1	1
TOTAL	**94**	**13**	**217**	**16**	**1**	**15**	**35**	**1**	**7**	**512**	**79**	**17**	**218**	**251**	**3**	**16**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	62	14	83	6	0	4	13	1	11	159	96	7	147	220	1	7
4:30 PM - 5:30 PM	48	7	119	6	0	10	24	1	5	276	42	9	113	135	0	6

	PHF	Trucks
AM	0.804	2.6%
PM	0.889	2.8%



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Turning Movement Report

Prepared For:

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952 Pollasky Avenue
Clovis, CA 93612

LOCATION Ave 280 @ Drive 88 / Drive 85B

LATITUDE 36.2981

COUNTY Tulare

LONGITUDE -119.3827

COLLECTION DATE Tuesday, August 28, 2018

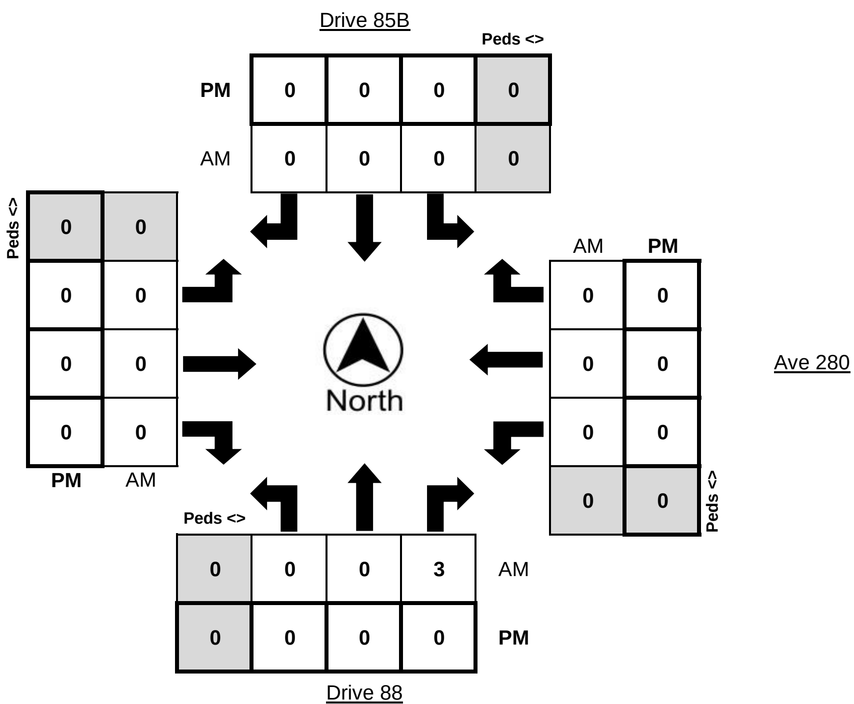
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:15 AM - 8:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	3	0
PM Peak Total	**0**	**0**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

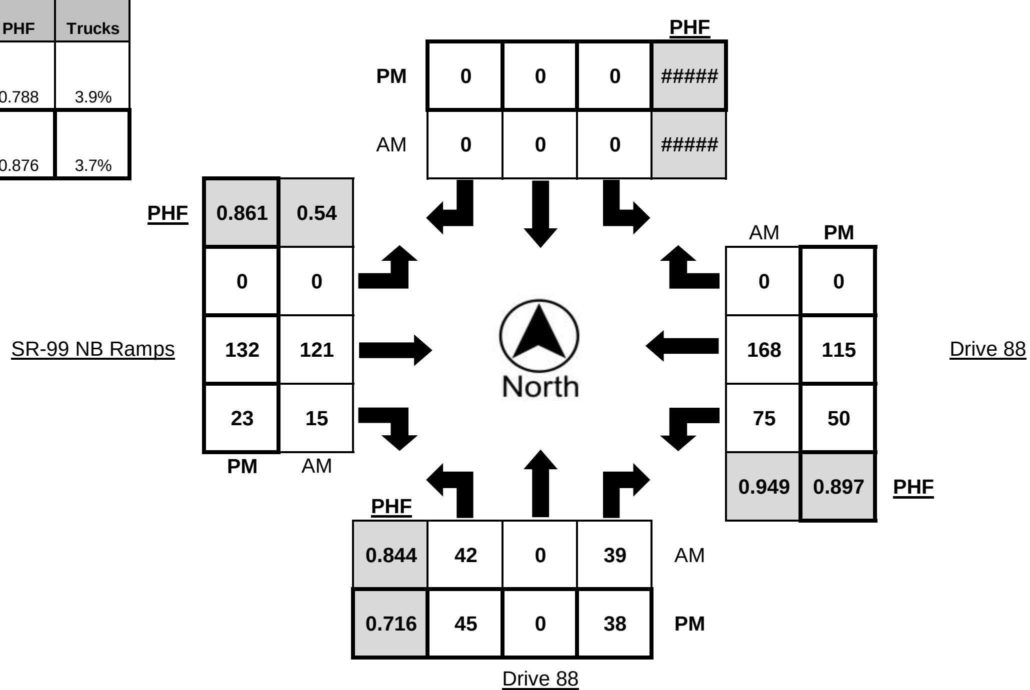
LOCATION Drive 88 @ SR-99 NB Ramps
COUNTY Tulare
COLLECTION DATE Tuesday, August 28, 2018
LATITUDE 36.2974
LONGITUDE -119.3827
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	9	0	4	0	0	0	0	0	0	13	10	0	17	40	0	2
7:15 AM - 7:30 AM	9	0	11	1	0	0	0	0	0	16	5	3	23	40	0	3
7:30 AM - 7:45 AM	7	0	7	0	0	0	0	0	0	16	0	2	17	47	0	3
7:45 AM - 8:00 AM	11	0	13	0	0	0	0	0	0	58	5	1	18	41	0	2
8:00 AM - 8:15 AM	15	0	8	0	0	0	0	0	0	31	5	1	17	40	0	2
8:15 AM - 8:30 AM	7	0	5	2	0	0	0	0	0	14	2	2	9	39	0	1
8:30 AM - 8:45 AM	3	0	4	1	0	0	0	0	0	21	2	2	3	27	0	1
8:45 AM - 9:00 AM	8	0	6	0	0	0	0	0	0	22	4	3	11	20	0	1
TOTAL	**69**	**0**	**58**	**4**	**0**	**0**	**0**	**0**	**0**	**191**	**33**	**14**	**115**	**294**	**0**	**15**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	11	0	5	1	0	0	0	0	0	41	8	8	16	25	0	1
4:15 PM - 4:30 PM	12	0	6	0	0	0	0	0	0	26	6	0	10	29	0	2
4:30 PM - 4:45 PM	11	0	11	4	0	0	0	0	0	42	3	2	11	29	0	3
4:45 PM - 5:00 PM	8	0	6	0	0	0	0	0	0	33	5	0	16	24	0	1
5:00 PM - 5:15 PM	14	0	15	0	0	0	0	0	0	31	9	1	13	33	0	2
5:15 PM - 5:30 PM	11	0	8	0	0	0	0	0	0	27	2	0	5	35	0	1
5:30 PM - 5:45 PM	6	0	5	0	0	0	0	0	0	28	2	0	13	35	0	3
5:45 PM - 6:00 PM	13	0	8	0	0	0	0	0	0	36	5	0	2	20	0	1
TOTAL	**86**	**0**	**64**	**5**	**0**	**0**	**0**	**0**	**0**	**264**	**40**	**11**	**86**	**230**	**0**	**14**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:15 AM - 8:15 AM	42	0	39	1	0	0	0	0	0	121	15	7	75	168	0	10
4:15 PM - 5:15 PM	45	0	38	4	0	0	0	0	0	132	23	3	50	115	0	8

	PHF	Trucks
AM	0.788	3.9%
PM	0.876	3.7%



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Turning Movement Report

Prepared For:

Peters Engineering Group
952 Pollasky Avenue
Clovis, CA 93612

LOCATION Drive 88 @ SR-99 NB Ramps

LATITUDE 36.2974

COUNTY Tulare

LONGITUDE -119.3827

COLLECTION DATE Tuesday, August 28, 2018

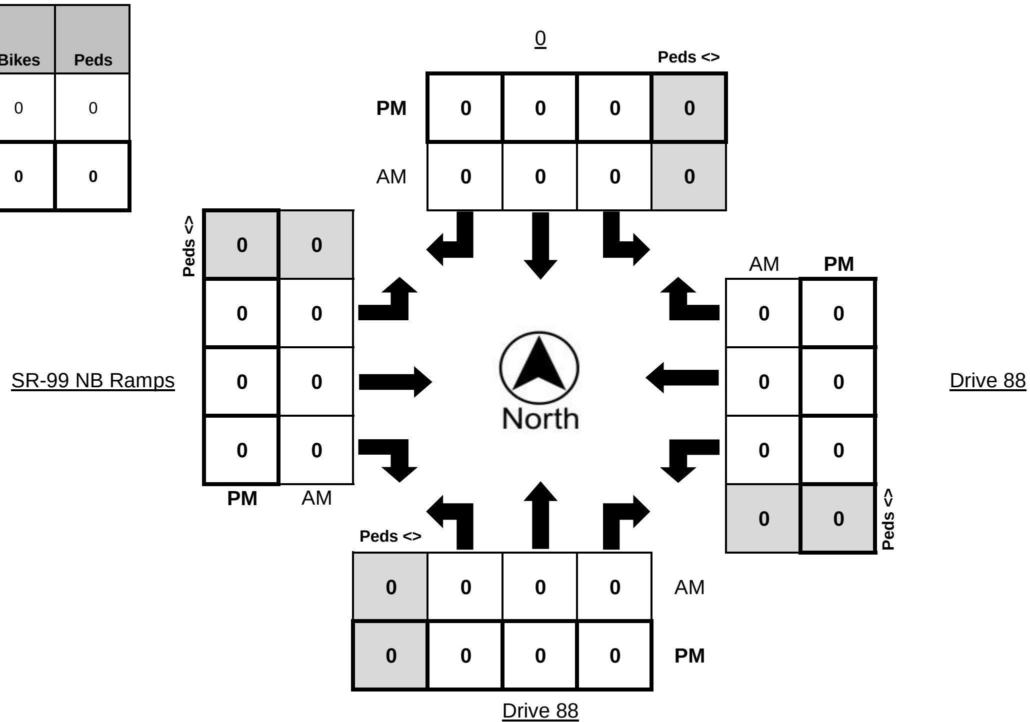
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**	**Left**	**Thru**	**Right**	**Peds**
7:15 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bikes	Peds
AM Peak Total	0	0
PM Peak Total	**0**	**0**



Metro Traffic Data Inc.
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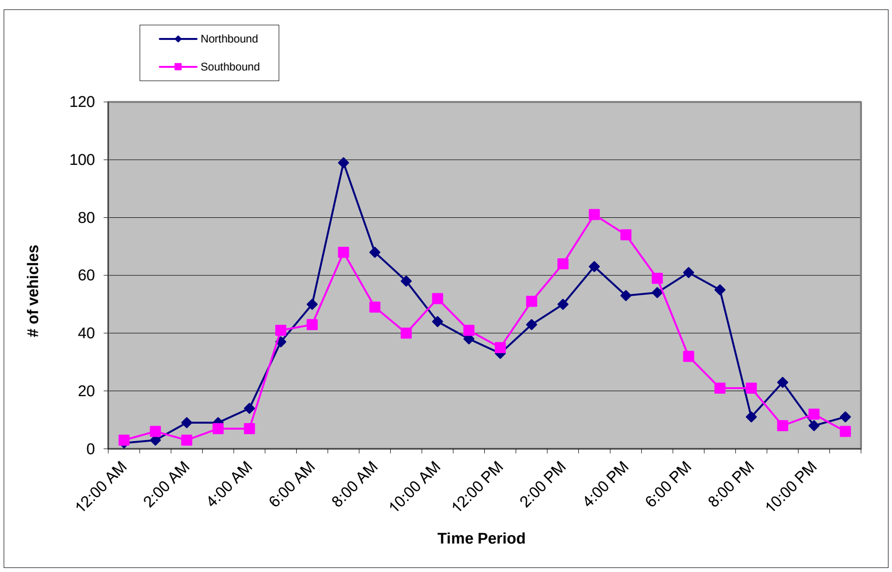
24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Rd 68
SEGMENT North of Ave 280
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2
LATITUDE 36.2979024
LONGITUDE -119.4212687
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	1	0	0	1	2	1	1	1	0	3	5
1:00 AM	0	0	1	2	3	0	1	3	2	6	9
2:00 AM	2	3	1	3	9	0	0	2	1	3	12
3:00 AM	2	0	4	3	9	1	3	2	1	7	16
4:00 AM	2	3	3	6	14	2	0	3	2	7	21
5:00 AM	4	9	13	11	37	1	16	7	17	41	78
6:00 AM	16	14	4	16	50	7	8	16	12	43	93
7:00 AM	12	11	40	36	99	5	14	24	25	68	167
8:00 AM	36	9	11	12	68	22	18	5	4	49	117
9:00 AM	17	17	17	7	58	12	7	10	11	40	98
10:00 AM	12	10	13	9	44	14	15	16	7	52	96
11:00 AM	7	13	5	13	38	13	7	10	11	41	79
12:00 PM	8	6	8	11	33	6	8	9	12	35	68
1:00 PM	5	14	12	12	43	8	9	18	16	51	94
2:00 PM	19	11	12	8	50	14	11	14	25	64	114
3:00 PM	15	17	21	10	63	22	15	33	11	81	144
4:00 PM	13	20	13	7	53	23	23	15	13	74	127
5:00 PM	16	11	11	16	54	26	15	11	7	59	113
6:00 PM	17	17	14	13	61	9	12	6	5	32	93
7:00 PM	16	18	8	13	55	6	3	10	2	21	76
8:00 PM	1	6	2	2	11	4	5	8	4	21	32
9:00 PM	3	10	5	5	23	2	4	0	2	8	31
10:00 PM	4	3	0	1	8	5	2	2	3	12	20
11:00 PM	5	3	2	1	11	3	2	1	0	6	17
Total	52.1%				896	47.9%				824	
	1720										

AM%	**46.0%**	**AM Peak 210**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.82**
PM%	**54.0%**	**PM Peak 156**	**2:45 pm to 3:45 pm**	**PM P.H.F.**	**0.72**



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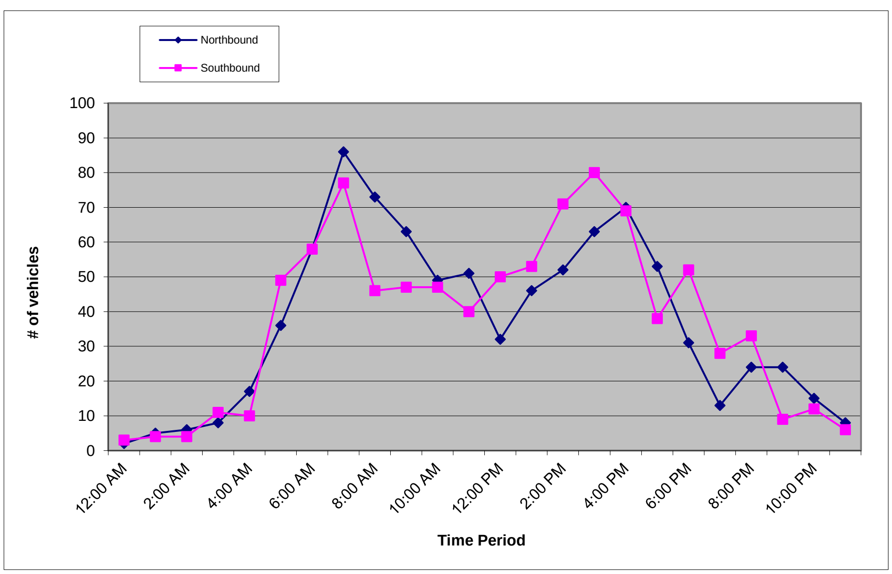
24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Rd 68
SEGMENT South of Ave 280
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2
LATITUDE 36.2979024
LONGITUDE -119.4212687
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	1	0	0	1	2	1	0	2	0	3	5
1:00 AM	1	1	1	2	5	0	0	3	1	4	9
2:00 AM	2	1	0	3	6	0	0	1	3	4	10
3:00 AM	1	0	5	2	8	1	1	5	4	11	19
4:00 AM	2	2	7	6	17	2	1	0	7	10	27
5:00 AM	3	7	14	12	36	4	18	9	18	49	85
6:00 AM	15	16	10	17	58	11	15	17	15	58	116
7:00 AM	13	16	28	29	86	12	20	23	22	77	163
8:00 AM	27	16	17	13	73	15	15	8	8	46	119
9:00 AM	18	19	18	8	63	7	17	8	15	47	110
10:00 AM	17	15	10	7	49	15	16	8	8	47	96
11:00 AM	13	9	11	18	51	12	9	9	10	40	91
12:00 PM	8	5	8	11	32	10	12	10	18	50	82
1:00 PM	11	17	9	9	46	9	16	13	15	53	99
2:00 PM	12	16	13	11	52	17	10	10	34	71	123
3:00 PM	12	26	15	10	63	19	18	28	15	80	143
4:00 PM	18	18	23	11	70	26	21	10	12	69	139
5:00 PM	14	11	15	13	53	10	9	9	10	38	91
6:00 PM	7	8	10	6	31	14	22	9	7	52	83
7:00 PM	5	3	4	1	13	9	7	6	6	28	41
8:00 PM	2	12	6	4	24	6	8	8	11	33	57
9:00 PM	4	11	6	3	24	1	4	1	3	9	33
10:00 PM	2	7	4	2	15	6	1	4	1	12	27
11:00 PM	3	1	2	2	8	2	2	2	0	6	14
Total	49.7%				885	50.3%				897	
	1782										

AM%	47.7%	AM Peak 180	7:15 am to 8:15 am	AM P.H.F.	0.88
PM%	52.3%	PM Peak 163	2:45 pm to 3:45 pm	PM P.H.F.	0.91



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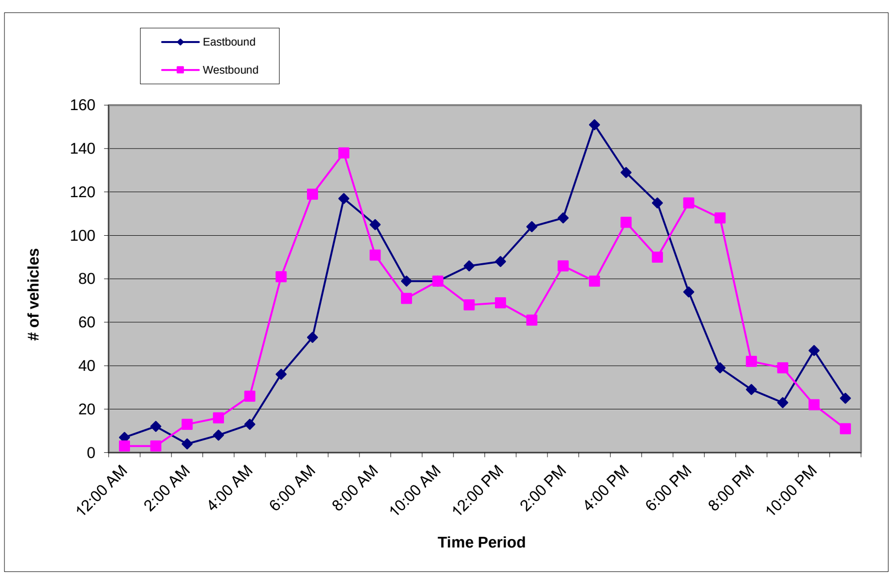
24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Ave 280
SEGMENT East of Rd 68
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2
LATITUDE 36.2979024
LONGITUDE -119.4212687
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	2	3	1	1	**7**	1	0	2	0	**3**	**10**
1:00 AM	4	2	4	2	**12**	1	1	0	1	**3**	**15**
2:00 AM	1	1	1	1	**4**	6	2	1	4	**13**	**17**
3:00 AM	1	2	3	2	**8**	3	1	5	7	**16**	**24**
4:00 AM	1	0	8	4	**13**	4	4	7	11	**26**	**39**
5:00 AM	5	8	12	11	**36**	7	23	25	26	**81**	**117**
6:00 AM	11	8	18	16	**53**	32	34	21	32	**119**	**172**
7:00 AM	12	25	36	44	**117**	23	26	52	37	**138**	**255**
8:00 AM	41	31	20	13	**105**	34	18	20	19	**91**	**196**
9:00 AM	22	22	14	21	**79**	16	17	26	12	**71**	**150**
10:00 AM	21	27	20	11	**79**	17	19	21	22	**79**	**158**
11:00 AM	17	23	15	31	**86**	19	16	8	25	**68**	**154**
12:00 PM	16	33	20	19	**88**	23	13	16	17	**69**	**157**
1:00 PM	20	35	27	22	**104**	13	12	15	21	**61**	**165**
2:00 PM	29	20	34	25	**108**	22	19	18	27	**86**	**194**
3:00 PM	27	48	51	25	**151**	19	18	25	17	**79**	**230**
4:00 PM	26	32	40	31	**129**	31	33	21	21	**106**	**235**
5:00 PM	41	18	32	24	**115**	21	27	19	23	**90**	**205**
6:00 PM	18	15	20	21	**74**	30	33	25	27	**115**	**189**
7:00 PM	14	5	13	7	**39**	31	36	15	26	**108**	**147**
8:00 PM	3	8	10	8	**29**	12	8	9	13	**42**	**71**
9:00 PM	6	10	6	1	**23**	9	7	13	10	**39**	**62**
10:00 PM	6	12	14	15	**47**	4	6	6	6	**22**	**69**
11:00 PM	11	6	5	3	**25**	7	1	3	0	**11**	**36**
Total	**49.9%**				**1531**	**50.1%**				**1536**	
	3067										

AM%	**42.6%**	**AM Peak 295**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.84**
PM%	**57.4%**	**PM Peak 241**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.79**



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24 Hour Count Report

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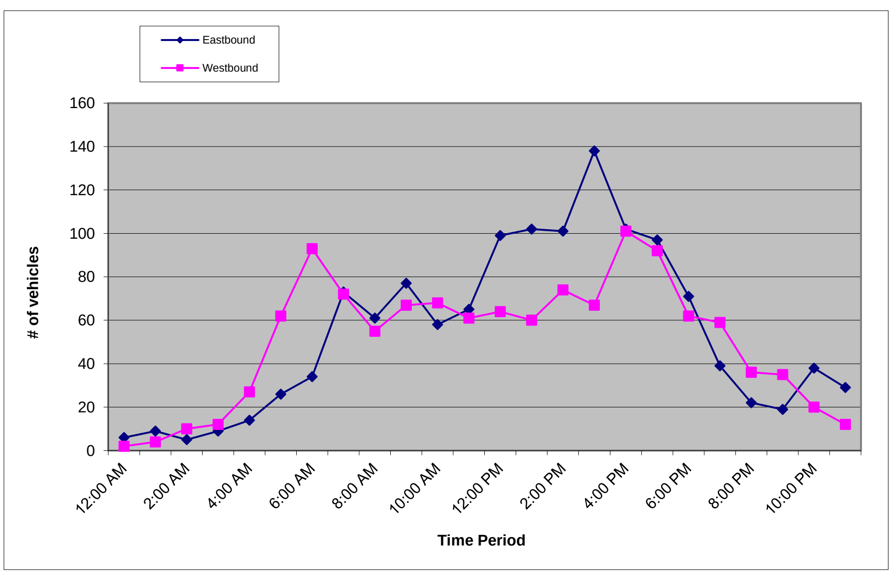
952 Pollasky Avenue
Clovis, CA 93612

STREET Ave 280
SEGMENT West of Rd 68
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2
LATITUDE 36.2979024
LONGITUDE -119.4212687
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	2	2	1	1	6	1	0	1	0	2	8
1:00 AM	3	1	4	1	9	1	2	0	1	4	13
2:00 AM	1	2	1	1	5	6	1	1	2	10	15
3:00 AM	0	2	4	3	9	1	3	4	4	12	21
4:00 AM	1	1	5	7	14	4	3	11	9	27	41
5:00 AM	6	3	11	6	26	4	14	23	21	62	88
6:00 AM	6	8	11	9	34	22	29	19	23	93	127
7:00 AM	9	19	16	29	73	14	19	21	18	72	145
8:00 AM	19	16	16	10	61	10	13	19	13	55	116
9:00 AM	14	24	14	25	77	14	11	29	13	67	144
10:00 AM	17	19	12	10	58	17	15	18	18	68	126
11:00 AM	11	24	7	23	65	20	11	7	23	61	126
12:00 PM	19	36	19	25	99	22	11	14	17	64	163
1:00 PM	16	41	23	22	102	14	14	13	19	60	162
2:00 PM	35	15	26	25	101	18	20	15	21	74	175
3:00 PM	22	43	48	25	138	14	19	21	13	67	205
4:00 PM	24	30	27	21	102	31	31	23	16	101	203
5:00 PM	27	16	26	28	97	21	31	19	21	92	189
6:00 PM	19	16	18	18	71	16	15	16	15	62	133
7:00 PM	15	6	8	10	39	18	18	10	13	59	98
8:00 PM	5	3	5	9	22	13	6	8	9	36	58
9:00 PM	4	6	4	5	19	9	4	11	11	35	54
10:00 PM	9	6	12	11	38	4	5	6	5	20	58
11:00 PM	12	8	6	3	29	7	1	3	1	12	41
Total	51.6%				1294	48.4%				1215	
	2509										

AM%	38.7%	AM Peak 151	7:15 am to 8:15 am	AM P.H.F.	0.80
PM%	61.3%	PM Peak 224	3:15 pm to 4:15 pm	PM P.H.F.	0.81



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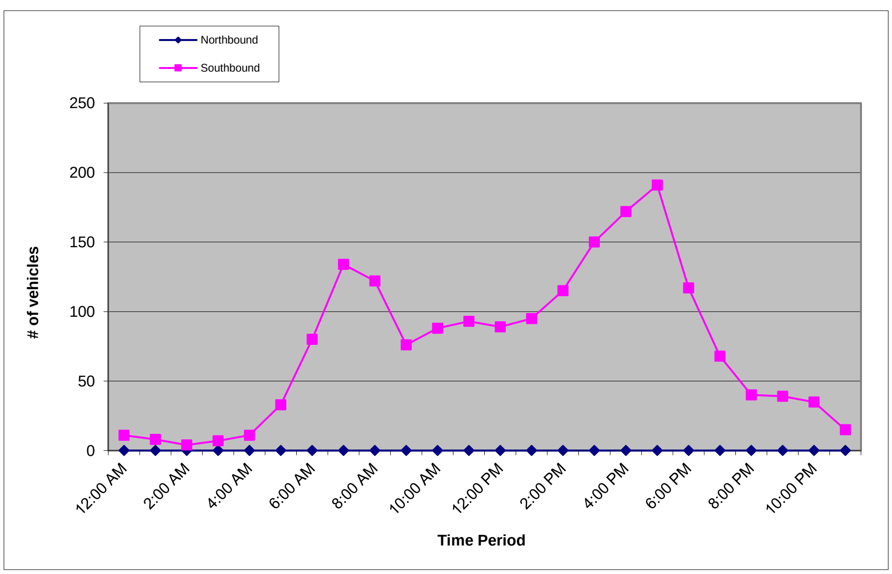
952 Pollasky Avenue
Clovis, CA 93612

STREET SR-99 SB Offramp
SEGMENT North of Ave 280
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 1

LATITUDE 36.2982267
LONGITUDE -119.3853378
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	0	0	**0**	4	2	4	1	**11**	**11**
1:00 AM	0	0	0	0	**0**	2	1	2	3	**8**	**8**
2:00 AM	0	0	0	0	**0**	2	1	0	1	**4**	**4**
3:00 AM	0	0	0	0	**0**	1	2	3	1	**7**	**7**
4:00 AM	0	0	0	0	**0**	4	3	0	4	**11**	**11**
5:00 AM	0	0	0	0	**0**	7	6	5	15	**33**	**33**
6:00 AM	0	0	0	0	**0**	12	13	24	31	**80**	**80**
7:00 AM	0	0	0	0	**0**	24	39	37	34	**134**	**134**
8:00 AM	0	0	0	0	**0**	36	29	27	30	**122**	**122**
9:00 AM	0	0	0	0	**0**	24	14	21	17	**76**	**76**
10:00 AM	0	0	0	0	**0**	27	22	19	20	**88**	**88**
11:00 AM	0	0	0	0	**0**	17	27	24	25	**93**	**93**
12:00 PM	0	0	0	0	**0**	21	26	22	20	**89**	**89**
1:00 PM	0	0	0	0	**0**	29	25	20	21	**95**	**95**
2:00 PM	0	0	0	0	**0**	26	28	30	31	**115**	**115**
3:00 PM	0	0	0	0	**0**	31	44	43	32	**150**	**150**
4:00 PM	0	0	0	0	**0**	44	34	46	48	**172**	**172**
5:00 PM	0	0	0	0	**0**	55	46	56	34	**191**	**191**
6:00 PM	0	0	0	0	**0**	29	36	27	25	**117**	**117**
7:00 PM	0	0	0	0	**0**	20	18	13	17	**68**	**68**
8:00 PM	0	0	0	0	**0**	8	11	10	11	**40**	**40**
9:00 PM	0	0	0	0	**0**	10	13	7	9	**39**	**39**
10:00 PM	0	0	0	0	**0**	10	11	6	8	**35**	**35**
11:00 PM	0	0	0	0	**0**	5	5	3	2	**15**	**15**
Total	**0.0%**				**0**	**100.0%**				**1793**	
	1793										

AM%	**37.2%**	**AM Peak 146**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.94**
PM%	**62.8%**	**PM Peak 205**	**4:45 pm to 5:45 pm**	**PM P.H.F.**	**0.92**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

24 Hour Count Report

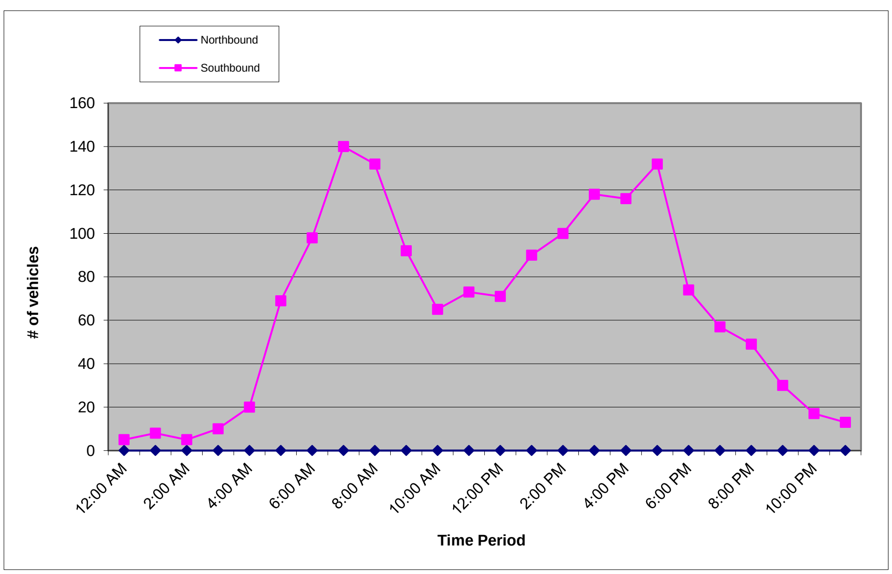
Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET SR-99 SB On-ramp
SEGMENT South of Ave 280
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 1

LATITUDE 36.2982267
LONGITUDE -119.3853378
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	0	0	0	0	0	2	2	1	0	5	5
1:00 AM	0	0	0	0	0	3	0	3	2	8	8
2:00 AM	0	0	0	0	0	1	2	0	2	5	5
3:00 AM	0	0	0	0	0	2	2	1	5	10	10
4:00 AM	0	0	0	0	0	1	4	10	5	20	20
5:00 AM	0	0	0	0	0	10	20	22	17	69	69
6:00 AM	0	0	0	0	0	23	10	36	29	98	98
7:00 AM	0	0	0	0	0	27	37	26	50	140	140
8:00 AM	0	0	0	0	0	48	31	23	30	132	132
9:00 AM	0	0	0	0	0	20	23	16	33	92	92
10:00 AM	0	0	0	0	0	16	20	17	12	65	65
11:00 AM	0	0	0	0	0	17	14	17	25	73	73
12:00 PM	0	0	0	0	0	14	20	16	21	71	71
1:00 PM	0	0	0	0	0	21	22	22	25	90	90
2:00 PM	0	0	0	0	0	23	25	23	29	100	100
3:00 PM	0	0	0	0	0	33	19	36	30	118	118
4:00 PM	0	0	0	0	0	30	23	29	34	116	116
5:00 PM	0	0	0	0	0	51	26	26	29	132	132
6:00 PM	0	0	0	0	0	18	20	20	16	74	74
7:00 PM	0	0	0	0	0	21	14	10	12	57	57
8:00 PM	0	0	0	0	0	15	13	12	9	49	49
9:00 PM	0	0	0	0	0	10	8	7	5	30	30
10:00 PM	0	0	0	0	0	6	5	3	3	17	17
11:00 PM	0	0	0	0	0	6	4	2	1	13	13
Total	0.0%				0	100.0%				1584	
	1584										

AM%	45.3%	AM Peak 161	7:15 am to 8:15 am	AM P.H.F.	0.81
PM%	54.7%	PM Peak 140	4:30 pm to 5:30 pm	PM P.H.F.	0.69



Metro Traffic Data Inc.
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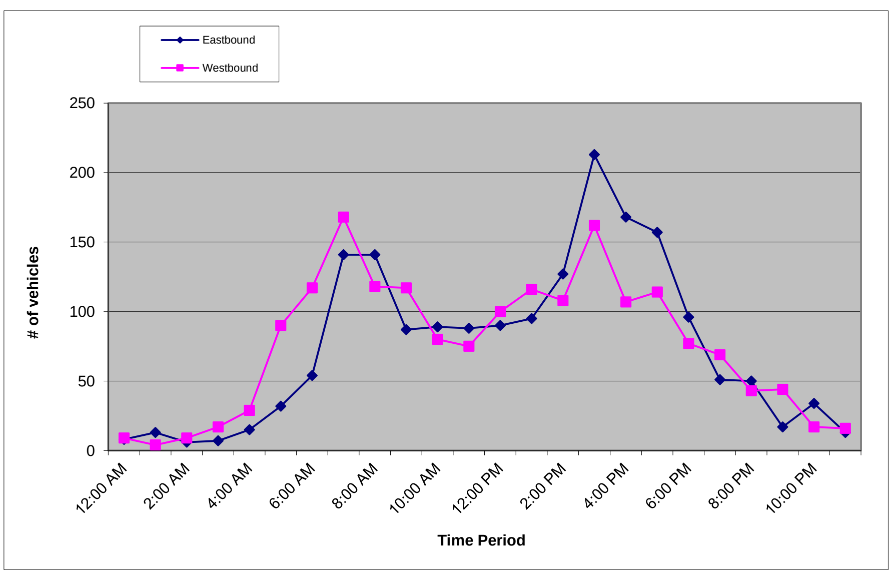
24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Ave 280
LATITUDE 36.2982267
SEGMENT West of SR-99 SB Ramps
LONGITUDE -119.3853378
COLLECTION DATE Tuesday, August 28, 2018
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	3	0	3	2	**8**	1	2	4	2	**9**	**17**
1:00 AM	4	1	5	3	**13**	1	2	0	1	**4**	**17**
2:00 AM	1	3	1	1	**6**	2	3	1	3	**9**	**15**
3:00 AM	1	2	3	1	**7**	3	1	6	7	**17**	**24**
4:00 AM	3	0	8	4	**15**	5	4	5	15	**29**	**44**
5:00 AM	3	8	13	8	**32**	10	23	26	31	**90**	**122**
6:00 AM	11	11	16	16	**54**	33	32	22	30	**117**	**171**
7:00 AM	13	25	38	65	**141**	21	34	56	57	**168**	**309**
8:00 AM	52	41	25	23	**141**	49	23	21	25	**118**	**259**
9:00 AM	19	22	19	27	**87**	25	38	24	30	**117**	**204**
10:00 AM	17	34	21	17	**89**	13	20	20	27	**80**	**169**
11:00 AM	19	23	17	29	**88**	21	13	10	31	**75**	**163**
12:00 PM	27	21	21	21	**90**	18	34	21	27	**100**	**190**
1:00 PM	18	22	28	27	**95**	25	40	24	27	**116**	**211**
2:00 PM	25	31	34	37	**127**	33	19	27	29	**108**	**235**
3:00 PM	45	29	101	38	**213**	36	68	35	23	**162**	**375**
4:00 PM	37	46	47	38	**168**	27	25	35	20	**107**	**275**
5:00 PM	42	43	43	29	**157**	28	26	27	33	**114**	**271**
6:00 PM	27	24	23	22	**96**	23	21	17	16	**77**	**173**
7:00 PM	22	3	15	11	**51**	23	19	12	15	**69**	**120**
8:00 PM	12	10	16	12	**50**	11	8	14	10	**43**	**93**
9:00 PM	6	5	3	3	**17**	11	15	9	9	**44**	**61**
10:00 PM	5	11	9	9	**34**	6	4	3	4	**17**	**51**
11:00 PM	7	4	1	1	**13**	6	6	3	1	**16**	**29**
Total	**49.8%**				**1792**	**50.2%**				**1806**	
	3598										

AM%	**42.1%**	**AM Peak 381**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.78**
PM%	**57.9%**	**PM Peak 380**	**2:45 pm to 3:45 pm**	**PM P.H.F.**	**0.70**



Metro Traffic Data Inc.

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24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Drive 85B

SEGMENT North of Ave 280

COLLECTION DATE Tuesday, August 28, 2018

NUMBER OF LANES 2

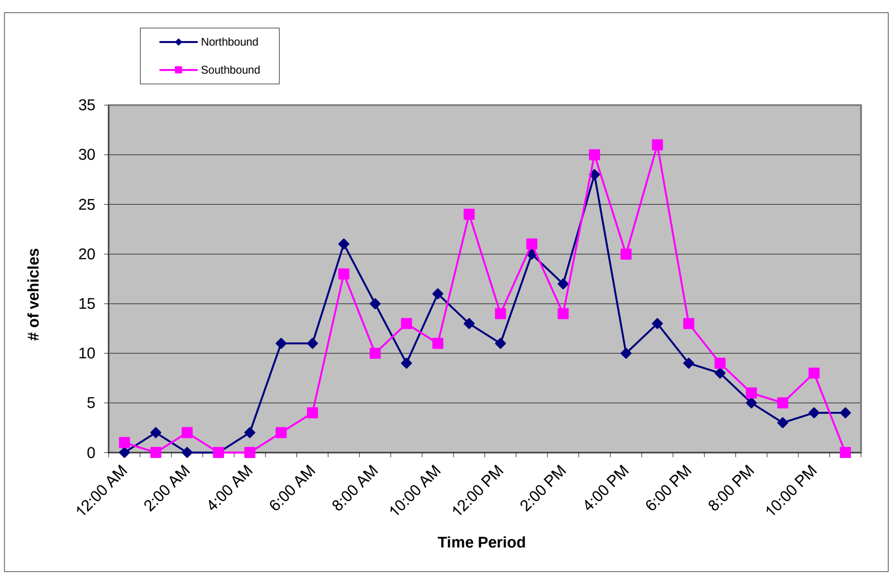
LATITUDE 36.2981099

LONGITUDE -119.3827254

WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	0	0	0	0	**0**	1	0	0	0	**1**	**1**
1:00 AM	0	2	0	0	**2**	0	0	0	0	**0**	**2**
2:00 AM	0	0	0	0	**0**	0	0	0	2	**2**	**2**
3:00 AM	0	0	0	0	**0**	0	0	0	0	**0**	**0**
4:00 AM	0	1	1	0	**2**	0	0	0	0	**0**	**2**
5:00 AM	3	0	2	6	**11**	0	2	0	0	**2**	**13**
6:00 AM	1	3	3	4	**11**	2	0	2	0	**4**	**15**
7:00 AM	2	3	4	12	**21**	4	5	5	4	**18**	**39**
8:00 AM	7	5	1	2	**15**	3	2	3	2	**10**	**25**
9:00 AM	2	5	1	1	**9**	2	4	2	5	**13**	**22**
10:00 AM	2	5	2	7	**16**	1	3	2	5	**11**	**27**
11:00 AM	5	2	3	3	**13**	4	5	5	10	**24**	**37**
12:00 PM	1	6	1	3	**11**	0	3	4	7	**14**	**25**
1:00 PM	6	7	6	1	**20**	6	9	1	5	**21**	**41**
2:00 PM	3	4	4	6	**17**	3	6	2	3	**14**	**31**
3:00 PM	7	2	14	5	**28**	12	7	4	7	**30**	**58**
4:00 PM	0	4	3	3	**10**	5	3	7	5	**20**	**30**
5:00 PM	4	2	1	6	**13**	15	7	5	4	**31**	**44**
6:00 PM	1	2	3	3	**9**	3	2	3	5	**13**	**22**
7:00 PM	3	2	3	0	**8**	3	2	2	2	**9**	**17**
8:00 PM	2	3	0	0	**5**	3	0	2	1	**6**	**11**
9:00 PM	0	1	1	1	**3**	5	0	0	0	**5**	**8**
10:00 PM	3	0	1	0	**4**	4	1	2	1	**8**	**12**
11:00 PM	2	0	0	2	**4**	0	0	0	0	**0**	**4**
Total	**47.5%**				**232**	**52.5%**				**256**	
	488										

AM%	**37.9%**	**AM Peak 43**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.67**
PM%	**62.1%**	**PM Peak 58**	**3:00 pm to 4:00 pm**	**PM P.H.F.**	**0.76**



24 Hour Count Report

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

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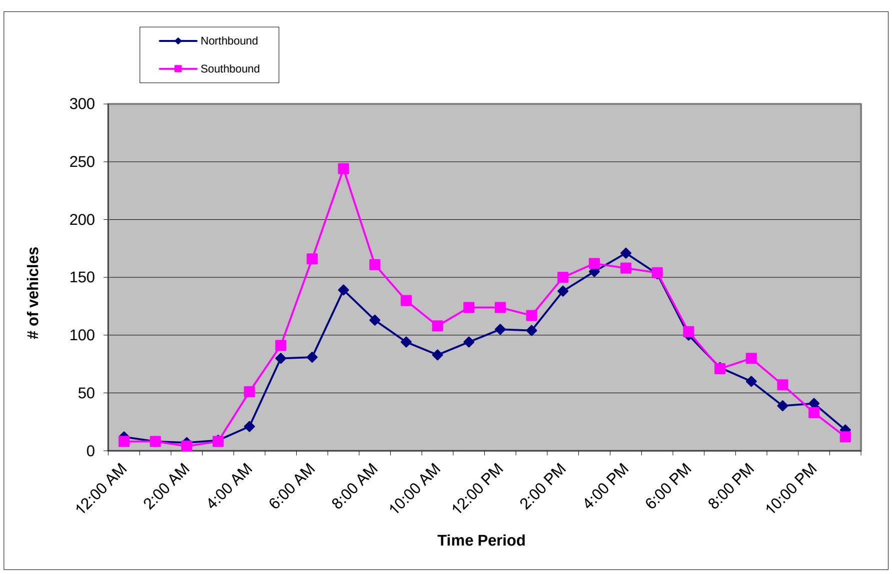
Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Drive 88
SEGMENT South of Ave 280
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2
LATITUDE 36.2981099
LONGITUDE -119.3827254
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	4	3	3	2	12	4	0	1	3	8	20
1:00 AM	3	3	1	1	8	4	2	0	2	8	16
2:00 AM	2	2	1	2	7	1	2	1	0	4	11
3:00 AM	5	0	4	0	9	0	2	3	3	8	17
4:00 AM	3	4	7	7	21	13	9	13	16	51	72
5:00 AM	8	12	22	38	80	22	24	20	25	91	171
6:00 AM	13	22	20	26	81	37	39	41	49	166	247
7:00 AM	19	25	23	72	139	53	64	64	63	244	383
8:00 AM	39	18	27	29	113	56	47	28	30	161	274
9:00 AM	24	21	16	33	94	29	33	30	38	130	224
10:00 AM	13	22	23	25	83	33	23	21	31	108	191
11:00 AM	25	18	19	32	94	34	31	29	30	124	218
12:00 PM	23	35	25	22	105	24	27	26	47	124	229
1:00 PM	23	23	27	31	104	27	37	24	29	117	221
2:00 PM	22	35	42	39	138	35	49	44	22	150	288
3:00 PM	30	39	48	38	155	33	36	49	44	162	317
4:00 PM	45	34	52	40	171	41	37	42	38	158	329
5:00 PM	47	35	34	37	153	46	39	47	22	154	307
6:00 PM	24	27	33	16	100	27	29	28	19	103	203
7:00 PM	18	25	15	14	72	29	14	16	12	71	143
8:00 PM	13	17	18	12	60	18	19	20	23	80	140
9:00 PM	10	9	16	4	39	19	13	8	17	57	96
10:00 PM	11	6	16	8	41	16	8	5	4	33	74
11:00 PM	7	7	3	1	18	7	1	3	1	12	30
Total	44.9%				1897	55.1%				2324	
	4221										

AM%	**43.7%**	**AM Peak**	**406**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.75**
PM%	**56.3%**	**PM Peak**	**340**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.88**



24 Hour Count Report

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
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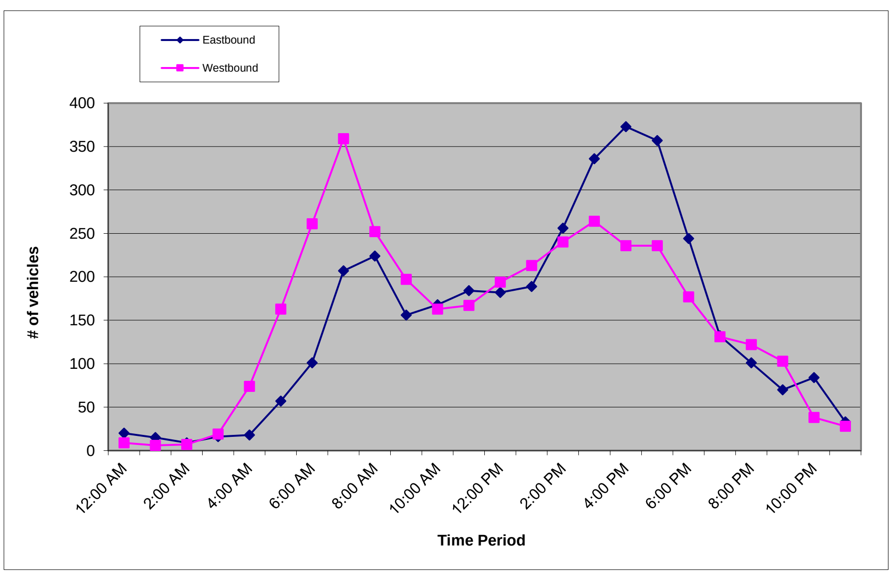
Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET	Ave 280	**LATITUDE**	36.2981099
SEGMENT	East of Drive 88 and Drive 85B	**LONGITUDE**	-119.3827254
COLLECTION DATE	Tuesday, August 28, 2018	**WEATHER**	Clear
NUMBER OF LANES	2		

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	8	4	6	2	**20**	2	3	1	3	**9**	**29**
1:00 AM	5	0	5	5	**15**	3	1	0	2	**6**	**21**
2:00 AM	4	1	1	3	**9**	2	2	3	0	**7**	**16**
3:00 AM	3	3	8	2	**16**	3	3	4	9	**19**	**35**
4:00 AM	6	4	4	4	**18**	23	14	17	20	**74**	**92**
5:00 AM	5	8	14	30	**57**	33	34	46	50	**163**	**220**
6:00 AM	9	22	32	38	**101**	56	70	55	80	**261**	**362**
7:00 AM	29	38	44	96	**207**	81	84	98	96	**359**	**566**
8:00 AM	64	50	55	55	**224**	90	65	47	50	**252**	**476**
9:00 AM	45	30	36	45	**156**	46	51	45	55	**197**	**353**
10:00 AM	39	48	46	35	**168**	43	33	41	46	**163**	**331**
11:00 AM	42	43	44	55	**184**	54	30	40	43	**167**	**351**
12:00 PM	46	51	46	39	**182**	38	45	44	67	**194**	**376**
1:00 PM	52	39	48	50	**189**	50	69	45	49	**213**	**402**
2:00 PM	48	60	74	74	**256**	68	63	60	49	**240**	**496**
3:00 PM	68	73	119	76	**336**	63	73	71	57	**264**	**600**
4:00 PM	89	88	103	93	**373**	56	58	63	59	**236**	**609**
5:00 PM	102	97	91	67	**357**	72	54	57	53	**236**	**593**
6:00 PM	64	66	62	52	**244**	50	45	48	34	**177**	**421**
7:00 PM	37	28	36	31	**132**	52	25	28	26	**131**	**263**
8:00 PM	18	27	35	21	**101**	37	28	30	27	**122**	**223**
9:00 PM	19	20	20	11	**70**	28	31	20	24	**103**	**173**
10:00 PM	18	20	22	24	**84**	19	6	3	10	**38**	**122**
11:00 PM	12	11	5	5	**33**	15	5	5	3	**28**	**61**
Total	**49.1%**				**3532**	**50.9%**				**3659**	
	7191										

AM%	**39.7%**	**AM Peak 610**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.79**
PM%	**60.3%**	**PM Peak 643**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.92**



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24 Hour Count Report

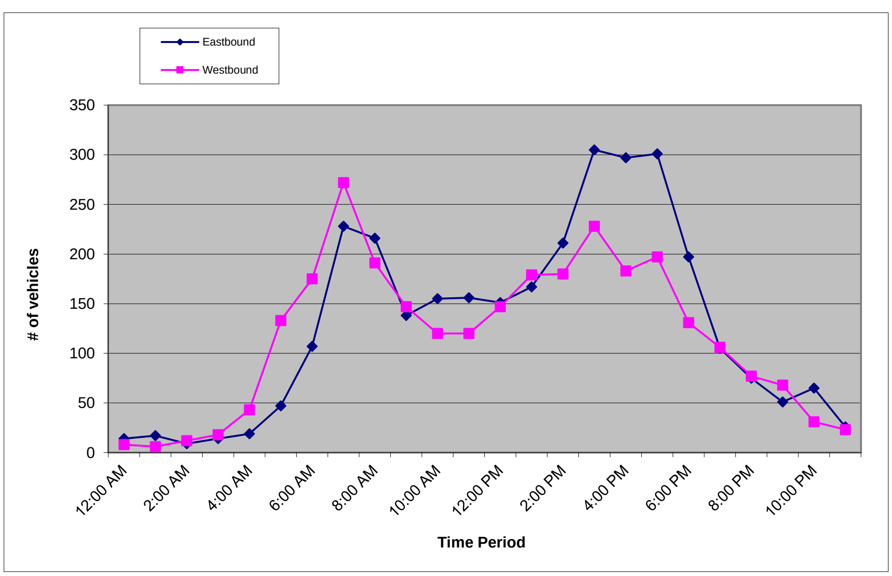
Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Ave 280
SEGMENT West of Drive 88 and Drive 85B
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2

LATITUDE 36.2981099
LONGITUDE -119.3827254
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	6	2	4	2	14	1	4	1	2	8	22
1:00 AM	6	2	4	5	17	3	2	0	1	6	23
2:00 AM	3	3	1	2	9	2	4	3	3	12	21
3:00 AM	2	4	6	2	14	7	2	3	6	18	32
4:00 AM	7	3	4	5	19	14	7	10	12	43	62
5:00 AM	8	7	11	21	47	19	23	43	48	133	180
6:00 AM	18	20	33	36	107	42	48	34	51	175	282
7:00 AM	31	52	65	80	228	51	61	79	81	272	500
8:00 AM	69	59	42	46	216	74	42	35	40	191	407
9:00 AM	37	28	35	38	138	33	36	31	47	147	285
10:00 AM	43	46	35	31	155	26	28	32	34	120	275
11:00 AM	31	42	38	45	156	33	19	26	42	120	276
12:00 PM	44	43	33	31	151	34	42	33	38	147	298
1:00 PM	42	40	44	41	167	36	58	39	46	179	346
2:00 PM	42	53	59	57	211	49	44	41	46	180	391
3:00 PM	62	61	115	67	305	59	69	56	44	228	533
4:00 PM	70	69	80	78	297	46	35	54	48	183	480
5:00 PM	85	80	85	51	301	67	38	42	50	197	498
6:00 PM	50	57	45	45	197	35	34	36	26	131	328
7:00 PM	36	20	27	22	105	40	28	17	21	106	211
8:00 PM	15	17	22	21	75	30	13	17	17	77	152
9:00 PM	13	17	10	11	51	18	23	17	10	68	119
10:00 PM	13	21	14	17	65	10	6	7	8	31	96
11:00 PM	9	8	4	5	26	10	8	4	1	23	49
Total	52.4%				3071	47.6%				2795	
	5866										

AM%	**40.3%**	**AM Peak 561**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.87**
PM%	**59.7%**	**PM Peak 533**	**3:00 pm to 4:00 pm**	**PM P.H.F.**	**0.78**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

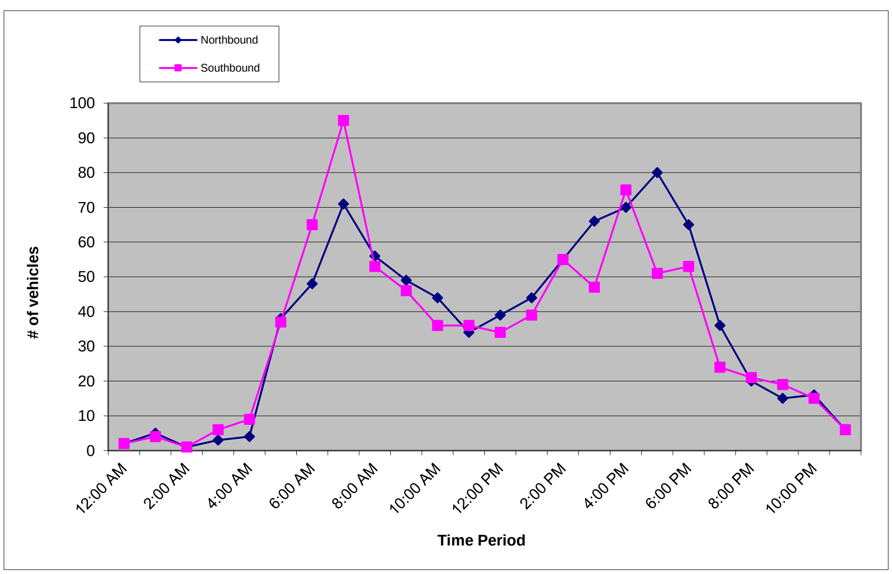
24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

STREET Drive 88
SEGMENT South of SR-99 NB Ramps
COLLECTION DATE Tuesday, August 28, 2018
NUMBER OF LANES 2
LATITUDE 36.2973879
LONGITUDE -119.3827146
WEATHER Clear

	Northbound					Southbound					Hourly
Hour	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Totals
12:00 AM	2	0	0	0	2	1	0	0	1	2	4
1:00 AM	2	2	0	1	5	1	2	0	1	4	9
2:00 AM	1	0	0	0	1	0	0	0	1	1	2
3:00 AM	2	0	1	0	3	2	0	1	3	6	9
4:00 AM	0	0	1	3	4	0	3	2	4	9	13
5:00 AM	3	6	9	20	38	4	9	14	10	37	75
6:00 AM	9	15	11	13	48	16	13	20	16	65	113
7:00 AM	13	20	14	24	71	27	28	17	23	95	166
8:00 AM	23	12	7	14	56	22	11	5	15	53	109
9:00 AM	9	17	7	16	49	14	10	11	11	46	95
10:00 AM	9	15	5	15	44	13	6	10	7	36	80
11:00 AM	6	6	10	12	34	5	11	9	11	36	70
12:00 PM	9	10	7	13	39	8	11	7	8	34	73
1:00 PM	8	16	15	5	44	7	15	6	11	39	83
2:00 PM	6	19	15	15	55	8	24	12	11	55	110
3:00 PM	8	17	21	20	66	12	14	8	13	47	113
4:00 PM	16	18	22	14	70	24	16	14	21	75	145
5:00 PM	29	19	11	21	80	22	7	15	7	51	131
6:00 PM	14	21	19	11	65	12	14	18	9	53	118
7:00 PM	10	11	7	8	36	6	8	5	5	24	60
8:00 PM	5	6	3	6	20	4	7	6	4	21	41
9:00 PM	6	0	5	4	15	9	4	2	4	19	34
10:00 PM	4	3	7	2	16	6	4	4	1	15	31
11:00 PM	1	3	1	1	6	2	3	0	1	6	12
Total	51.1%				867	48.9%				829	
	1696										

AM%	**43.9%**	**AM Peak 171**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.89**
PM%	**56.1%**	**PM Peak 156**	**4:15 pm to 5:15 pm**	**PM P.H.F.**	**0.76**



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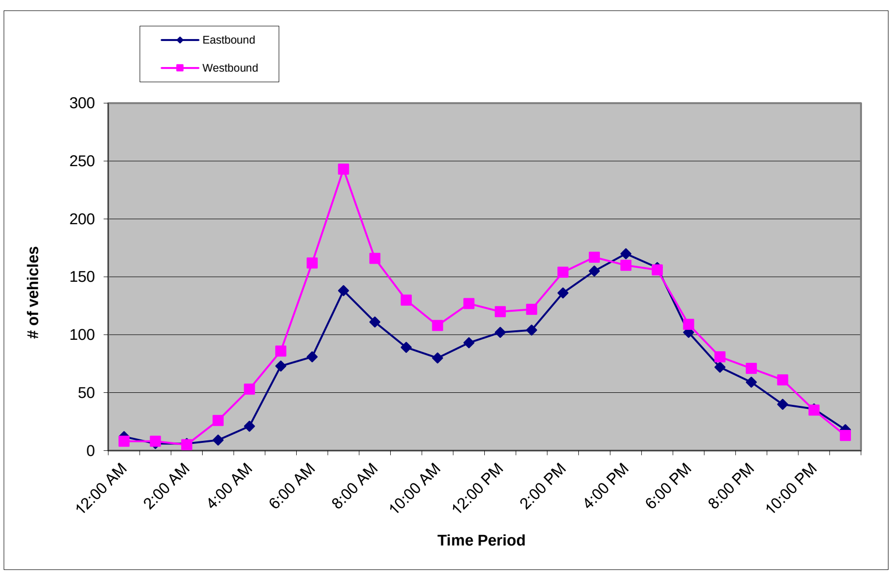
24 Hour Count Report

Prepared For: **Peters Engineering Group**
952 Pollasky Avenue
Clovis, CA 93612

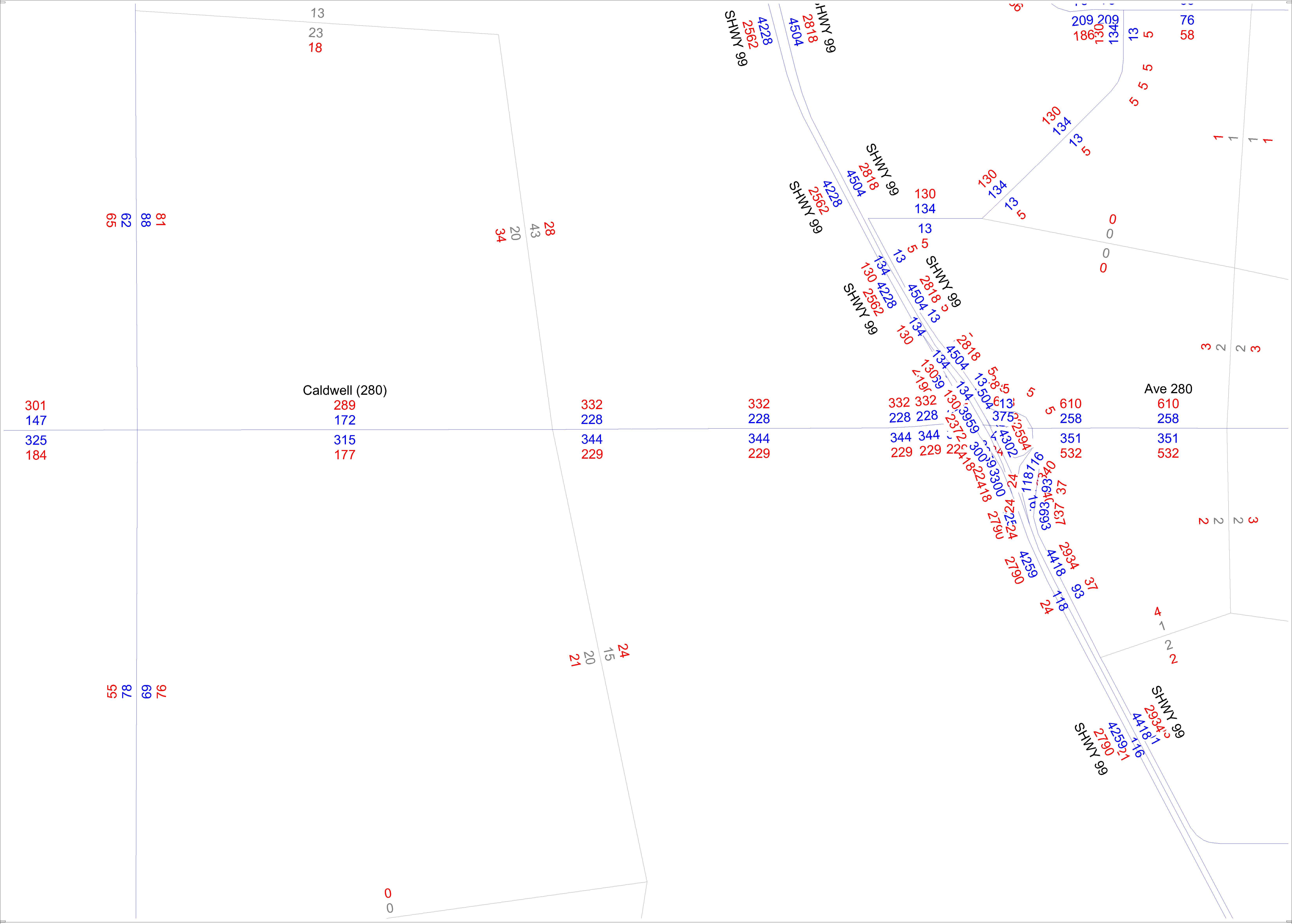
STREET SR-99 NB Ramps
LATITUDE 36.2973879
SEGMENT West of Drive 88
LONGITUDE -119.3827146
COLLECTION DATE Tuesday, August 28, 2018
WEATHER Clear
NUMBER OF LANES 2

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	4	3	3	2	**12**	3	1	1	3	**8**	**20**
1:00 AM	1	3	1	1	**6**	4	2	0	2	**8**	**14**
2:00 AM	3	0	1	2	**6**	1	2	0	2	**5**	**11**
3:00 AM	5	0	4	0	**9**	3	1	12	10	**26**	**35**
4:00 AM	3	3	8	7	**21**	12	11	12	18	**53**	**74**
5:00 AM	8	11	22	32	**73**	19	22	21	24	**86**	**159**
6:00 AM	15	22	19	25	**81**	37	36	43	46	**162**	**243**
7:00 AM	17	27	23	71	**138**	57	63	64	59	**243**	**381**
8:00 AM	39	19	25	28	**111**	57	48	30	31	**166**	**277**
9:00 AM	24	17	15	33	**89**	30	33	29	38	**130**	**219**
10:00 AM	14	22	22	22	**80**	31	24	20	33	**108**	**188**
11:00 AM	22	19	19	33	**93**	34	31	28	34	**127**	**220**
12:00 PM	22	34	26	20	**102**	21	31	25	43	**120**	**222**
1:00 PM	23	23	27	31	**104**	33	33	26	30	**122**	**226**
2:00 PM	21	35	42	38	**136**	34	48	46	26	**154**	**290**
3:00 PM	31	39	45	40	**155**	34	35	48	50	**167**	**322**
4:00 PM	46	32	53	39	**170**	41	39	40	40	**160**	**330**
5:00 PM	46	35	33	44	**158**	46	40	48	22	**156**	**314**
6:00 PM	25	27	33	17	**102**	28	29	28	24	**109**	**211**
7:00 PM	17	24	16	15	**72**	27	25	13	16	**81**	**153**
8:00 PM	13	17	18	11	**59**	14	19	19	19	**71**	**130**
9:00 PM	10	9	16	5	**40**	25	12	9	15	**61**	**101**
10:00 PM	11	7	10	8	**36**	17	9	5	4	**35**	**71**
11:00 PM	7	7	3	1	**18**	7	1	3	2	**13**	**31**
Total	**44.1%**				**1871**	**55.9%**				**2371**	
	4242										

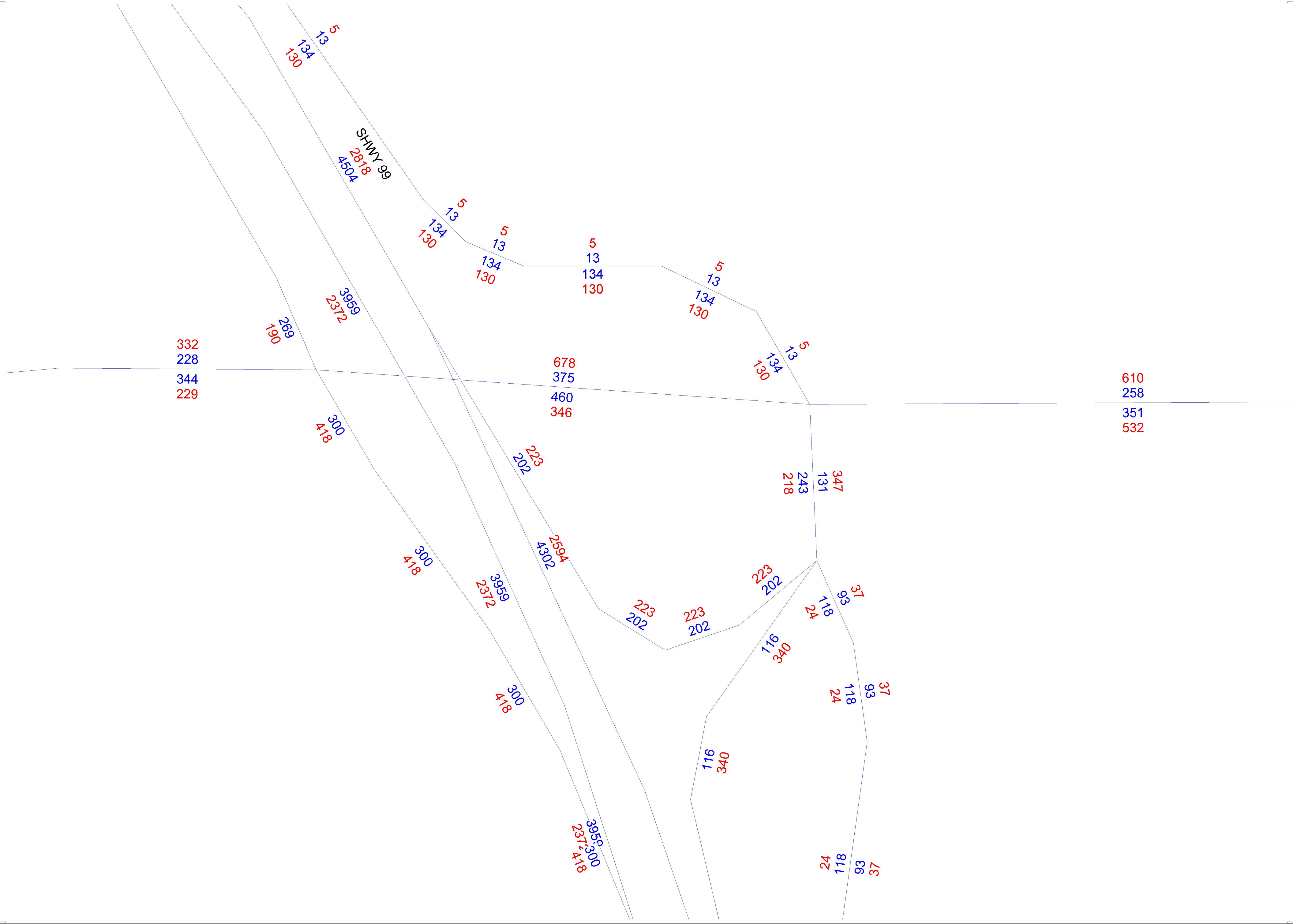
AM%	**43.4%**	**AM Peak 403**	**7:15 am to 8:15 am**	**AM P.H.F.**	**0.78**
PM%	**56.6%**	**PM Peak 344**	**3:15 pm to 4:15 pm**	**PM P.H.F.**	**0.92**



APPENDIX B
TULARE COUNTY TRAVEL MODEL

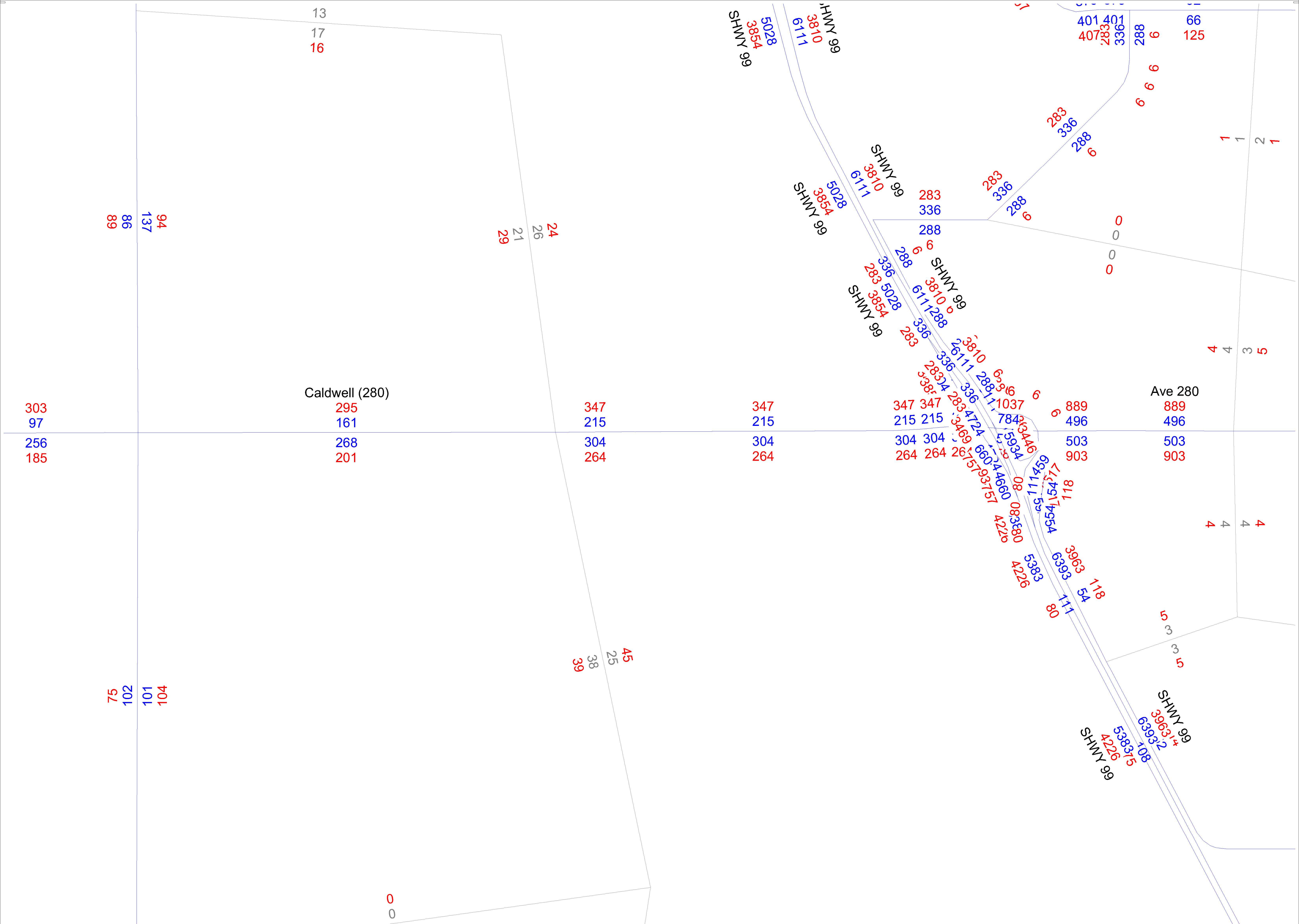


2015 Tulare County Travel Model
AM and PM Peak Hour Traffic Volumes



2015 Tulare County Travel Model
AM and PM Peak Hour Traffic Volumes

Licensed to Peters Engineering



2040 Tulare County Travel Model
AM and PM Peak Hour Traffic Volumes

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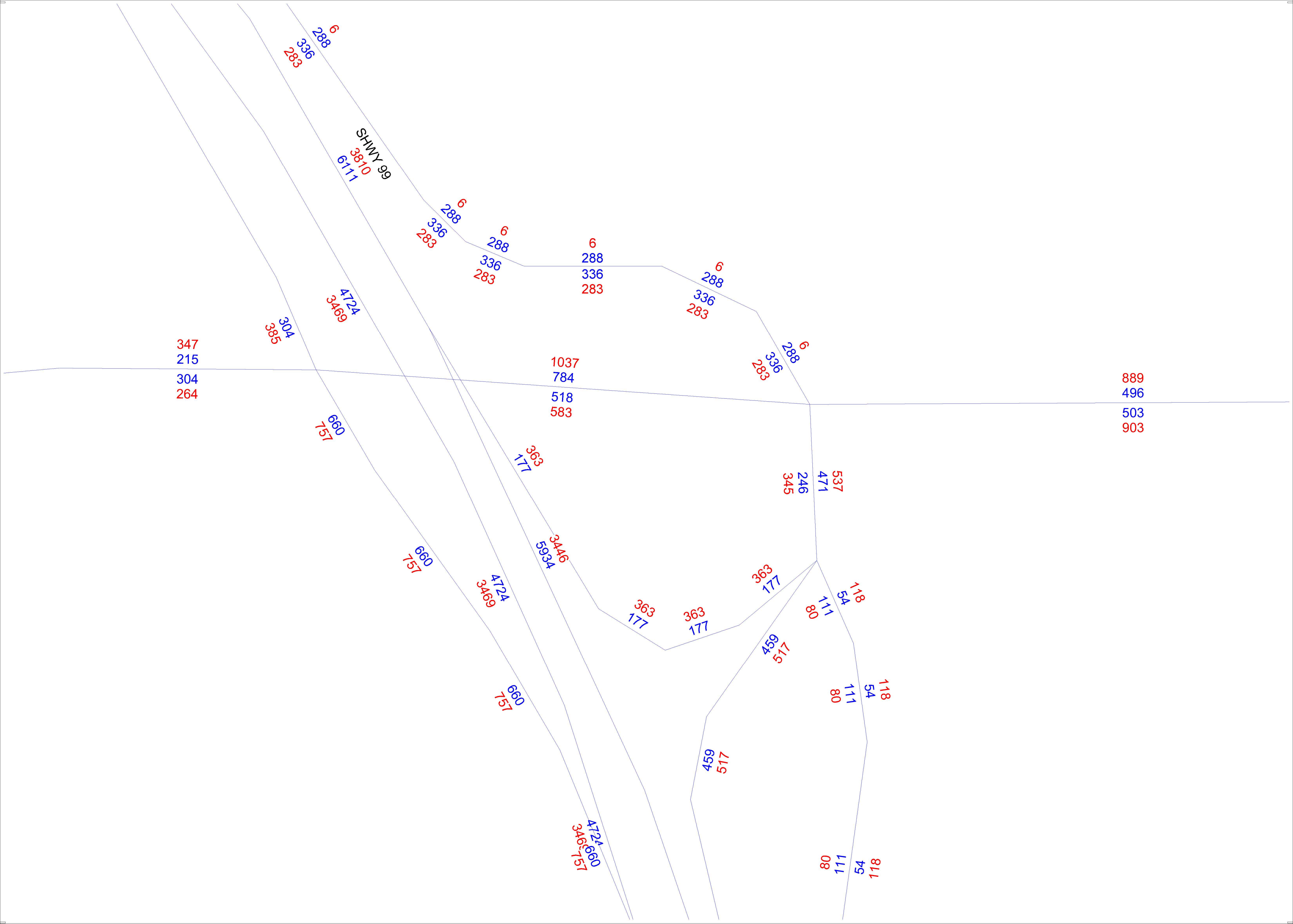

2040 Tulare County Travel Model
AM and PM Peak Hour Traffic Volumes

cube

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APPENDIX C

INTERSECTION ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	51	25	27	45	77	17	39	44	51	28	6
Future Vol, veh/h	7	51	25	27	45	77	17	39	44	51	28	6
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.86	0.86	0.86	0.85	0.85	0.85
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	10	71	35	38	63	107	20	45	51	60	33	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.9	8.5	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	8%	18%	60%
Vol Thru, %	39%	61%	30%	33%
Vol Right, %	44%	30%	52%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	83	149	85
LT Vol	17	7	27	51
Through Vol	39	51	45	28
RT Vol	44	25	77	6
Lane Flow Rate	116	115	207	100
Geometry Grp	1	1	1	1
Degree of Util (X)	0.15	0.148	0.253	0.138
Departure Headway (Hd)	4.652	4.616	4.407	4.973
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	769	776	813	719
Service Time	2.692	2.652	2.439	3.015
HCM Lane V/C Ratio	0.151	0.148	0.255	0.139
HCM Control Delay	8.5	8.5	8.9	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	1	0.5

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	148	32	127	170	0	0	0	0	118	2	26
Future Vol, veh/h	0	148	32	127	170	0	0	0	0	118	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	83	83	92	92	92	92	94	94	94
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	211	46	153	205	0	0	0	0	126	2	28

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	257	0	0				745	768	205
Stage 1	-	-	-	-	-	-				511	511	-
Stage 2	-	-	-	-	-	-				234	257	-
Critical Hdwy	-	-	-	4.14	-	-				6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-				5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-				3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	1296	-	0				379	330	831
Stage 1	0	-	-	-	-	0				598	534	-
Stage 2	0	-	-	-	-	0				800	691	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1296	-	-				329	0	831
Mov Cap-2 Maneuver	-	-	-	-	-	-				329	0	-
Stage 1	-	-	-	-	-	-				518	0	-
Stage 2	-	-	-	-	-	-				800	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.5	21.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1296	-	369
HCM Lane V/C Ratio	-	-	0.118	-	0.421
HCM Control Delay (s)	-	-	8.1	0	21.7
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.4	-	2

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	159	96	147	220	2	62	14	83	1	4	13
Future Vol, veh/h	11	159	96	147	220	2	62	14	83	1	4	13
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.55	0.55	0.55	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	13	192	116	156	234	2	113	25	151	1	5	15
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.8	15.9	11.2	9.4
HCM LOS	B	C	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	82%	0%	4%	40%	20%	0%
Vol Thru, %	18%	0%	60%	60%	80%	0%
Vol Right, %	0%	100%	36%	1%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	76	83	266	369	5	13
LT Vol	62	0	11	147	1	0
Through Vol	14	0	159	220	4	0
RT Vol	0	83	96	2	0	13
Lane Flow Rate	138	151	320	393	6	15
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.264	0.241	0.466	0.588	0.011	0.026
Departure Headway (Hd)	6.876	5.746	5.235	5.395	7.117	6.296
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	522	625	686	667	501	566
Service Time	4.619	3.488	3.274	3.432	4.881	4.06
HCM Lane V/C Ratio	0.264	0.242	0.466	0.589	0.012	0.027
HCM Control Delay	12.1	10.3	12.8	15.9	10	9.2
HCM Lane LOS	B	B	B	C	A	A
HCM 95th-tile Q	1.1	0.9	2.5	3.8	0	0.1

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	121	15	75	168	42	39
Future Vol, veh/h	121	15	75	168	42	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	54	54	95	95	84	84
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	224	28	79	177	50	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	252	0	573	238
Stage 1	-	-	-	-	238	-
Stage 2	-	-	-	-	335	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1302	-	478	796
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	720	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1302	-	446	796
Mov Cap-2 Maneuver	-	-	-	-	446	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	672	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	566	-	-	1302	-
HCM Lane V/C Ratio	0.17	-	-	0.061	-
HCM Control Delay (s)	12.7	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	18	62	22	9	84	13	12	22	36	31	38	5
Future Vol, veh/h	18	62	22	9	84	13	12	22	36	31	38	5
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.76	0.76	0.76	0.80	0.80	0.80
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	21	73	26	11	105	16	16	29	47	39	48	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	8.6	8.1	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	18%	8%	42%
Vol Thru, %	31%	61%	79%	51%
Vol Right, %	51%	22%	12%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	102	106	74
LT Vol	12	18	9	31
Through Vol	22	62	84	38
RT Vol	36	22	13	5
Lane Flow Rate	92	120	132	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.115	0.152	0.169	0.124
Departure Headway (Hd)	4.504	4.57	4.593	4.815
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	796	785	782	745
Service Time	2.53	2.596	2.617	2.841
HCM Lane V/C Ratio	0.116	0.153	0.169	0.123
HCM Control Delay	8.1	8.4	8.6	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	0.6	0.4

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	135	35	101	101	0	0	0	0	183	4	8
Future Vol, veh/h	0	135	35	101	101	0	0	0	0	183	4	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	80	80	80	92	92	92	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	150	39	126	126	0	0	0	0	206	4	9

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	189	0	0				548	568	126
Stage 1	-	-	-	-	-	-				379	379	-
Stage 2	-	-	-	-	-	-				169	189	-
Critical Hdwy	-	-	-	4.14	-	-				6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-				5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-				3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	1373	-	0				494	430	919
Stage 1	0	-	-	-	-	0				688	611	-
Stage 2	0	-	-	-	-	0				856	740	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1373	-	-				445	0	919
Mov Cap-2 Maneuver	-	-	-	-	-	-				445	0	-
Stage 1	-	-	-	-	-	-				620	0	-
Stage 2	-	-	-	-	-	-				856	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.9	20
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1373	-	455
HCM Lane V/C Ratio	-	-	0.092	-	0.482
HCM Control Delay (s)	-	-	7.9	0	20
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.3	-	2.6

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	276	42	113	135	1	48	7	119	1	10	24
Future Vol, veh/h	5	276	42	113	135	1	48	7	119	1	10	24
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	5	291	44	131	157	1	57	8	142	1	11	27
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	12.4	12	10	9
HCM LOS	B	B	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	87%	0%	2%	45%	9%	0%
Vol Thru, %	13%	0%	85%	54%	91%	0%
Vol Right, %	0%	100%	13%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	55	119	323	249	11	24
LT Vol	48	0	5	113	1	0
Through Vol	7	0	276	135	10	0
RT Vol	0	119	42	1	0	24
Lane Flow Rate	65	142	340	290	12	27
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.121	0.217	0.473	0.42	0.023	0.044
Departure Headway (Hd)	6.676	5.52	5.008	5.226	6.584	5.823
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	538	650	724	692	543	614
Service Time	4.412	3.255	3.017	3.236	4.328	3.567
HCM Lane V/C Ratio	0.121	0.218	0.47	0.419	0.022	0.044
HCM Control Delay	10.3	9.8	12.4	12	9.5	8.8
HCM Lane LOS	B	A	B	B	A	A
HCM 95th-tile Q	0.4	0.8	2.6	2.1	0.1	0.1

Intersection						
Int Delay, s/veh	3.6					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	132	23	50	115	45	38
Future Vol, veh/h	132	23	50	115	45	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	90	90	72	72
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	153	27	56	128	63	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	180	0	406	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	239	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1384	-	597	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	796	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1384	-	571	872
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	761	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	678	-	-	1384	-
HCM Lane V/C Ratio	0.17	-	-	0.04	-
HCM Control Delay (s)	11.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	65	25	27	59	77	17	39	44	51	28	6
Future Vol, veh/h	7	65	25	27	59	77	17	39	44	51	28	6
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.86	0.86	0.86	0.85	0.85	0.85
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	10	90	35	38	82	107	20	45	51	60	33	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.7	9.3	8.7	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	7%	17%	60%
Vol Thru, %	39%	67%	36%	33%
Vol Right, %	44%	26%	47%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	97	163	85
LT Vol	17	7	27	51
Through Vol	39	65	59	28
RT Vol	44	25	77	6
Lane Flow Rate	116	135	226	100
Geometry Grp	1	1	1	1
Degree of Util (X)	0.153	0.175	0.281	0.141
Departure Headway (Hd)	4.749	4.672	4.463	5.071
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	751	765	804	704
Service Time	2.8	2.716	2.501	3.123
HCM Lane V/C Ratio	0.154	0.176	0.281	0.142
HCM Control Delay	8.7	8.7	9.3	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.6	1.2	0.5

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	225	81	127	247	0	0	0	0	118	2	75
Future Vol, veh/h	0	225	81	127	247	0	0	0	0	118	2	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	83	83	92	92	92	92	94	94	94
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	321	116	153	298	0	0	0	0	126	2	80

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	437	0	0				983	1041	298
Stage 1	-	-	-	-	-	-				604	604	-
Stage 2	-	-	-	-	-	-				379	437	-
Critical Hdwy	-	-	-	4.14	-	-				6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-				5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-				3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	1112	-	0				274	228	737
Stage 1	0	-	-	-	-	0				542	485	-
Stage 2	0	-	-	-	-	0				688	576	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1112	-	-				229	0	737
Mov Cap-2 Maneuver	-	-	-	-	-	-				229	0	-
Stage 1	-	-	-	-	-	-				453	0	-
Stage 2	-	-	-	-	-	-				688	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3	36.5
HCM LOS			E

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1112	-	313
HCM Lane V/C Ratio	-	-	0.138	-	0.663
HCM Control Delay (s)	-	-	8.8	0	36.5
HCM Lane LOS	-	-	A	A	E
HCM 95th %tile Q(veh)	-	-	0.5	-	4.4

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	187	145	147	248	2	111	14	83	1	4	13
Future Vol, veh/h	11	187	145	147	248	2	111	14	83	1	4	13
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.55	0.55	0.55	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	13	225	175	156	264	2	202	25	151	1	5	15
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	18.6	21.4	14.3	10.3
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	89%	0%	3%	37%	20%	0%
Vol Thru, %	11%	0%	55%	62%	80%	0%
Vol Right, %	0%	100%	42%	1%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	125	83	343	397	5	13
LT Vol	111	0	11	147	1	0
Through Vol	14	0	187	248	4	0
RT Vol	0	83	145	2	0	13
Lane Flow Rate	227	151	413	422	6	15
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.463	0.259	0.647	0.693	0.013	0.029
Departure Headway (Hd)	7.341	6.168	5.64	5.911	7.997	7.169
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	489	578	636	608	450	502
Service Time	5.121	3.947	3.717	3.988	5.697	4.869
HCM Lane V/C Ratio	0.464	0.261	0.649	0.694	0.013	0.03
HCM Control Delay	16.4	11.1	18.6	21.4	10.8	10.1
HCM Lane LOS	C	B	C	C	B	B
HCM 95th-tile Q	2.4	1	4.7	5.5	0	0.1

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	15	75	217	42	39
Future Vol, veh/h	170	15	75	217	42	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	54	54	95	95	84	84
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	315	28	79	228	50	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	343	0	715	329
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1205	-	394	708
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1205	-	364	708
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	475	-	-	1205	-
HCM Lane V/C Ratio	0.203	-	-	0.066	-
HCM Control Delay (s)	14.5	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	66	22	9	91	13	12	22	36	31	38	5
Future Vol, veh/h	18	66	22	9	91	13	12	22	36	31	38	5
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.76	0.76	0.76	0.80	0.80	0.80
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	21	78	26	11	114	16	16	29	47	39	48	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	8.7	8.2	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	17%	8%	42%
Vol Thru, %	31%	62%	81%	51%
Vol Right, %	51%	21%	12%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	106	113	74
LT Vol	12	18	9	31
Through Vol	22	66	91	38
RT Vol	36	22	13	5
Lane Flow Rate	92	125	141	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.116	0.159	0.181	0.125
Departure Headway (Hd)	4.537	4.586	4.604	4.848
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	789	782	780	739
Service Time	2.568	2.614	2.631	2.878
HCM Lane V/C Ratio	0.117	0.16	0.181	0.124
HCM Control Delay	8.2	8.5	8.7	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.6	0.7	0.4

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	176	61	101	121	0	0	0	0	183	4	20
Future Vol, veh/h	0	176	61	101	121	0	0	0	0	183	4	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	80	80	80	92	92	92	89	89	89
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	196	68	126	151	0	0	0	0	206	4	22

Major/Minor	Major1			Major2						Minor2		
Conflicting Flow All	-	0	0	263	0	0				633	667	151
Stage 1	-	-	-	-	-	-				404	404	-
Stage 2	-	-	-	-	-	-				229	263	-
Critical Hdwy	-	-	-	4.14	-	-				6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-				5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-				5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-				3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	1290	-	0				441	377	890
Stage 1	0	-	-	-	-	0				670	596	-
Stage 2	0	-	-	-	-	0				804	687	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1290	-	-				394	0	890
Mov Cap-2 Maneuver	-	-	-	-	-	-				394	0	-
Stage 1	-	-	-	-	-	-				598	0	-
Stage 2	-	-	-	-	-	-				804	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.7	24
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1290	-	417
HCM Lane V/C Ratio	-	-	0.098	-	0.558
HCM Control Delay (s)	-	-	8.1	0	24
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0.3	-	3.3

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	291	68	113	142	1	61	7	119	1	10	24
Future Vol, veh/h	5	291	68	113	142	1	61	7	119	1	10	24
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.84	0.84	0.84	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	5	306	72	131	165	1	73	8	142	1	11	27
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	13.8	12.5	10.3	9.3
HCM LOS	B	B	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	90%	0%	1%	44%	9%	0%
Vol Thru, %	10%	0%	80%	55%	91%	0%
Vol Right, %	0%	100%	19%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	119	364	256	11	24
LT Vol	61	0	5	113	1	0
Through Vol	7	0	291	142	10	0
RT Vol	0	119	68	1	0	24
Lane Flow Rate	81	142	383	298	12	27
Geometry Grp	7	7	2	2	7	7
Degree of Util (X)	0.154	0.223	0.537	0.441	0.024	0.046
Departure Headway (Hd)	6.835	5.664	5.042	5.336	6.783	6.02
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	525	633	717	676	527	593
Service Time	4.575	3.404	3.075	3.373	4.535	3.771
HCM Lane V/C Ratio	0.154	0.224	0.534	0.441	0.023	0.046
HCM Control Delay	10.8	10	13.8	12.5	9.7	9.1
HCM Lane LOS	B	A	B	B	A	A
HCM 95th-tile Q	0.5	0.8	3.2	2.3	0.1	0.1

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	23	50	141	45	38
Future Vol, veh/h	145	23	50	141	45	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	90	90	72	72
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	169	27	56	157	63	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	195	0	450	182
Stage 1	-	-	-	-	182	-
Stage 2	-	-	-	-	268	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1366	-	563	855
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	772	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1366	-	538	855
Mov Cap-2 Maneuver	-	-	-	-	538	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	737	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	648	-	-	1366	-
HCM Lane V/C Ratio	0.178	-	-	0.041	-
HCM Control Delay (s)	11.8	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	112	31	36	100	96	21	74	56	63	55	7
Future Vol, veh/h	9	112	31	36	100	96	21	74	56	63	55	7
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.86	0.86	0.86	0.85	0.85	0.85
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	13	156	43	50	139	133	24	86	65	74	65	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	12.2	10.5	10.6
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	6%	16%	50%
Vol Thru, %	49%	74%	43%	44%
Vol Right, %	37%	20%	41%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	152	232	125
LT Vol	21	9	36	63
Through Vol	74	112	100	55
RT Vol	56	31	96	7
Lane Flow Rate	176	211	322	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.268	0.312	0.453	0.237
Departure Headway (Hd)	5.49	5.32	5.059	5.794
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	653	676	712	619
Service Time	3.533	3.359	3.094	3.84
HCM Lane V/C Ratio	0.27	0.312	0.452	0.237
HCM Control Delay	10.5	10.8	12.2	10.6
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.1	1.3	2.4	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	477	89	483	328	0	0	0	0	462	2	107
Future Volume (veh/h)	0	477	89	483	328	0	0	0	0	462	2	107
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0				1827	1827	1900
Adj Flow Rate, veh/h	0	518	97	525	357	0				310	271	116
Adj No. of Lanes	0	2	0	2	2	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	4	4	4	4	0				4	4	4
Cap, veh/h	0	800	149	698	1928	0				513	358	153
Arrive On Green	0.00	0.27	0.27	0.21	0.56	0.00				0.30	0.30	0.30
Sat Flow, veh/h	0	3013	545	3375	3563	0				1740	1215	520
Grp Volume(v), veh/h	0	307	308	525	357	0				310	0	387
Grp Sat Flow(s),veh/h/ln	0	1736	1731	1688	1736	0				1740	0	1735
Q Serve(g_s), s	0.0	9.4	9.5	8.8	3.1	0.0				9.2	0.0	12.2
Cycle Q Clear(g_c), s	0.0	9.4	9.5	8.8	3.1	0.0				9.2	0.0	12.2
Prop In Lane	0.00		0.31	1.00		0.00				1.00		0.30
Lane Grp Cap(c), veh/h	0	475	474	698	1928	0				513	0	512
V/C Ratio(X)	0.00	0.65	0.65	0.75	0.19	0.00				0.60	0.00	0.76
Avail Cap(c_a), veh/h	0	851	849	1543	3549	0				1143	0	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	19.3	19.3	22.4	6.6	0.0				18.2	0.0	19.2
Incr Delay (d2), s/veh	0.0	1.5	1.5	1.7	0.0	0.0				1.1	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.6	4.7	4.2	1.5	0.0				4.6	0.0	6.1
LnGrp Delay(d),s/veh	0.0	20.7	20.8	24.1	6.7	0.0				19.3	0.0	21.5
LnGrp LOS		C	C	C	A					B		C
Approach Vol, veh/h		615			882						697	
Approach Delay, s/veh		20.8			17.0						20.6	
Approach LOS		C			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			16.9	21.0		22.2		37.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			27.5	29.5		39.5		61.5
Max Q Clear Time (g_c+I1), s			10.8	11.5		14.2		5.1
Green Ext Time (p_c), s			1.7	5.0		3.6		6.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Notes

Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	615	525	357	316	304
v/c Ratio	0.67	0.64	0.18	0.65	0.62
Control Delay	28.9	31.2	8.4	31.3	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	31.2	8.4	31.3	27.5
Queue Length 50th (ft)	121	107	34	127	107
Queue Length 95th (ft)	245	217	79	276	246
Internal Link Dist (ft)	1834		700		949
Turn Bay Length (ft)		500			
Base Capacity (vph)	1464	1346	2899	947	925
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.39	0.12	0.33	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	835	189	0	728	423	178	0	386	0	0	0
Future Volume (veh/h)	0	835	189	0	728	423	178	0	386	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1900	1845	1845			
Adj Flow Rate, veh/h	0	908	205	0	791	460	193	170	306			
Adj No. of Lanes	0	2	1	0	2	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	3	3	0	3	3	3	3	3			
Cap, veh/h	0	1961	877	0	1961	877	269	237	441			
Arrive On Green	0.00	0.56	0.56	0.00	0.56	0.56	0.28	0.28	0.28			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	955	842	1568			
Grp Volume(v), veh/h	0	908	205	0	791	460	363	0	306			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1797	0	1568			
Q Serve(g_s), s	0.0	8.7	3.8	0.0	7.3	10.4	10.3	0.0	9.9			
Cycle Q Clear(g_c), s	0.0	8.7	3.8	0.0	7.3	10.4	10.3	0.0	9.9			
Prop In Lane	0.00		1.00	0.00		1.00	0.53		1.00			
Lane Grp Cap(c), veh/h	0	1961	877	0	1961	877	506	0	441			
V/C Ratio(X)	0.00	0.46	0.23	0.00	0.40	0.52	0.72	0.00	0.69			
Avail Cap(c_a), veh/h	0	3312	1482	0	3312	1482	1508	0	1315			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	7.4	6.3	0.0	7.1	7.8	18.3	0.0	18.2			
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	0.1	0.5	1.9	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	4.2	1.6	0.0	3.4	4.5	5.3	0.0	4.5			
LnGrp Delay(d),s/veh	0.0	7.6	6.5	0.0	7.2	8.3	20.2	0.0	20.1			
LnGrp LOS		A	A		A	A	C		C			
Approach Vol, veh/h		1113			1251			669				
Approach Delay, s/veh		7.4			7.6			20.2				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.4		36.2				36.2
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		47.5		53.5				53.5
Max Q Clear Time (g_c+I1), s		12.3		10.7				12.4
Green Ext Time (p_c), s		3.6		19.6				19.3

Intersection Summary			
HCM 2010 Ctrl Delay			10.3
HCM 2010 LOS			B

Notes

Lane Group	EBT	EBR	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	908	205	791	460	315	298
v/c Ratio	0.59	0.26	0.51	0.48	0.54	0.52
Control Delay	11.9	3.1	11.1	3.1	15.5	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	3.1	11.1	3.1	15.5	12.5
Queue Length 50th (ft)	81	2	68	0	55	40
Queue Length 95th (ft)	183	34	154	43	156	127
Internal Link Dist (ft)	700		1833		141	
Turn Bay Length (ft)		150		150		
Base Capacity (vph)	3361	1511	3361	1522	1479	1381
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.14	0.24	0.30	0.21	0.22

Intersection Summary

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	123	27	12	168	16	15	31	50	38	51	6
Future Vol, veh/h	22	123	27	12	168	16	15	31	50	38	51	6
Peak Hour Factor	0.85	0.85	0.85	0.80	0.80	0.80	0.76	0.76	0.76	0.80	0.80	0.80
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	26	145	32	15	210	20	20	41	66	48	64	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.9	10.5	9.2	9.6
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	13%	6%	40%
Vol Thru, %	32%	72%	86%	54%
Vol Right, %	52%	16%	8%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	172	196	95
LT Vol	15	22	12	38
Through Vol	31	123	168	51
RT Vol	50	27	16	6
Lane Flow Rate	126	202	245	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.177	0.278	0.335	0.177
Departure Headway (Hd)	5.048	4.94	4.917	5.374
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	704	720	725	661
Service Time	3.135	3.015	2.989	3.462
HCM Lane V/C Ratio	0.179	0.281	0.338	0.18
HCM Control Delay	9.2	9.9	10.5	9.6
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.6	1.1	1.5	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	416	70	670	357	0	0	0	0	843	5	76
Future Volume (veh/h)	0	416	70	670	357	0	0	0	0	843	5	76
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0				1827	1827	1900
Adj Flow Rate, veh/h	0	452	76	728	388	0				997	0	0
Adj No. of Lanes	0	2	0	2	2	0				2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	4	4	4	4	0				4	4	4
Cap, veh/h	0	627	105	878	1845	0				1207	633	0
Arrive On Green	0.00	0.21	0.21	0.26	0.53	0.00				0.35	0.00	0.00
Sat Flow, veh/h	0	3068	498	3375	3563	0				3480	1827	0
Grp Volume(v), veh/h	0	262	266	728	388	0				997	0	0
Grp Sat Flow(s),veh/h/ln	0	1736	1739	1688	1736	0				1740	1827	0
Q Serve(g_s), s	0.0	10.4	10.5	15.1	4.4	0.0				19.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	10.4	10.5	15.1	4.4	0.0				19.4	0.0	0.0
Prop In Lane	0.00		0.29	1.00		0.00				1.00		0.00
Lane Grp Cap(c), veh/h	0	366	366	878	1845	0				1207	633	0
V/C Ratio(X)	0.00	0.72	0.72	0.83	0.21	0.00				0.83	0.00	0.00
Avail Cap(c_a), veh/h	0	481	482	1345	2556	0				2186	1148	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	27.2	27.2	25.8	9.1	0.0				22.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	3.7	2.7	0.1	0.0				1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.3	5.4	7.3	2.1	0.0				9.5	0.0	0.0
LnGrp Delay(d),s/veh	0.0	30.7	30.9	28.5	9.2	0.0				23.6	0.0	0.0
LnGrp LOS		C	C	C	A					C		
Approach Vol, veh/h		528			1116						997	
Approach Delay, s/veh		30.8			21.8						23.6	
Approach LOS		C			C						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			23.8	20.1		30.2		43.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			29.5	20.5		46.5		54.5
Max Q Clear Time (g_c+I1), s			17.1	12.5		21.4		6.4
Green Ext Time (p_c), s			2.2	3.1		4.3		5.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Notes

Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	528	728	388	504	500
v/c Ratio	0.78	0.82	0.22	0.79	0.79
Control Delay	45.5	42.2	14.0	35.8	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	42.2	14.0	35.8	35.1
Queue Length 50th (ft)	162	223	67	290	282
Queue Length 95th (ft)	#264	319	109	444	434
Internal Link Dist (ft)	1834		700		949
Turn Bay Length (ft)		500			
Base Capacity (vph)	789	1109	2113	856	848
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.66	0.18	0.59	0.59

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1158	116	0	868	789	150	0	636	0	0	0
Future Volume (veh/h)	0	1158	116	0	868	789	150	0	636	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	1845	0	1845	1845	1900	1845	1845			
Adj Flow Rate, veh/h	0	1259	126	0	943	858	163	396	427			
Adj No. of Lanes	0	2	1	0	2	1	0	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	3	3	0	3	3	3	3	3			
Cap, veh/h	0	1958	876	0	1958	876	187	454	553			
Arrive On Green	0.00	0.56	0.56	0.00	0.56	0.56	0.35	0.35	0.35			
Sat Flow, veh/h	0	3597	1568	0	3597	1568	530	1288	1568			
Grp Volume(v), veh/h	0	1259	126	0	943	858	559	0	427			
Grp Sat Flow(s),veh/h/ln	0	1752	1568	0	1752	1568	1818	0	1568			
Q Serve(g_s), s	0.0	25.0	3.9	0.0	16.4	53.9	29.1	0.0	24.5			
Cycle Q Clear(g_c), s	0.0	25.0	3.9	0.0	16.4	53.9	29.1	0.0	24.5			
Prop In Lane	0.00		1.00	0.00		1.00	0.29		1.00			
Lane Grp Cap(c), veh/h	0	1958	876	0	1958	876	641	0	553			
V/C Ratio(X)	0.00	0.64	0.14	0.00	0.48	0.98	0.87	0.00	0.77			
Avail Cap(c_a), veh/h	0	1958	876	0	1958	876	800	0	690			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	15.4	10.7	0.0	13.5	21.8	30.6	0.0	29.1			
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.0	0.2	25.4	8.8	0.0	4.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	12.3	1.7	0.0	7.9	29.3	16.2	0.0	11.2			
LnGrp Delay(d),s/veh	0.0	16.1	10.8	0.0	13.7	47.1	39.4	0.0	33.4			
LnGrp LOS		B	B		B	D	D		C			
Approach Vol, veh/h		1385			1801			986				
Approach Delay, s/veh		15.6			29.6			36.8				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		40.1		61.0				61.0
Change Period (Y+Rc), s		4.5		4.5				4.5
Max Green Setting (Gmax), s		44.5		56.5				56.5
Max Q Clear Time (g_c+I1), s		31.1		27.0				55.9
Green Ext Time (p_c), s		4.6		23.0				0.5

Intersection Summary			
HCM 2010 Ctrl Delay			26.7
HCM 2010 LOS			C

Notes

Lane Group	EBT	EBR	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	1259	126	943	858	432	422
v/c Ratio	0.73	0.15	0.55	0.72	0.71	0.72
Control Delay	18.8	5.4	15.3	5.7	26.6	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	5.4	15.3	5.7	26.6	27.6
Queue Length 50th (ft)	219	8	143	9	149	147
Queue Length 95th (ft)	421	42	282	98	354	353
Internal Link Dist (ft)	700		1833		141	
Turn Bay Length (ft)		150		150		
Base Capacity (vph)	2732	1242	2732	1401	1037	991
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.10	0.35	0.61	0.42	0.43

Intersection Summary

APPENDIX D
TRAFFIC SIGNAL WARRANTS WORKSHEETS

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 8-28-18
CALC JR DATE 9-26-18
CHK ______ DATE ______

DIST ____ CO ____ RTE ____ PM ____

Major St: AVE 280 Critical Approach Speed > 40 mph
Minor St: RD 68 Critical Approach Speed ______ mph

Speed limit or critical speed on major street traffic > 40 mph.......................... ☒ or
In built up area of isolated community of < 10,000 population......................... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

NONE

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)								
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)								

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

NONE

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7:15-8:15				Hour
Both Approaches - Major Street	X		232				
Higher Approach - Minor Street	X		100				

← MAX HOUR DOES NOT PLOT ABOVE LINE

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
<u>OR</u>, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

<u>PART A</u> **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. 417	Yes ☐ No ☒

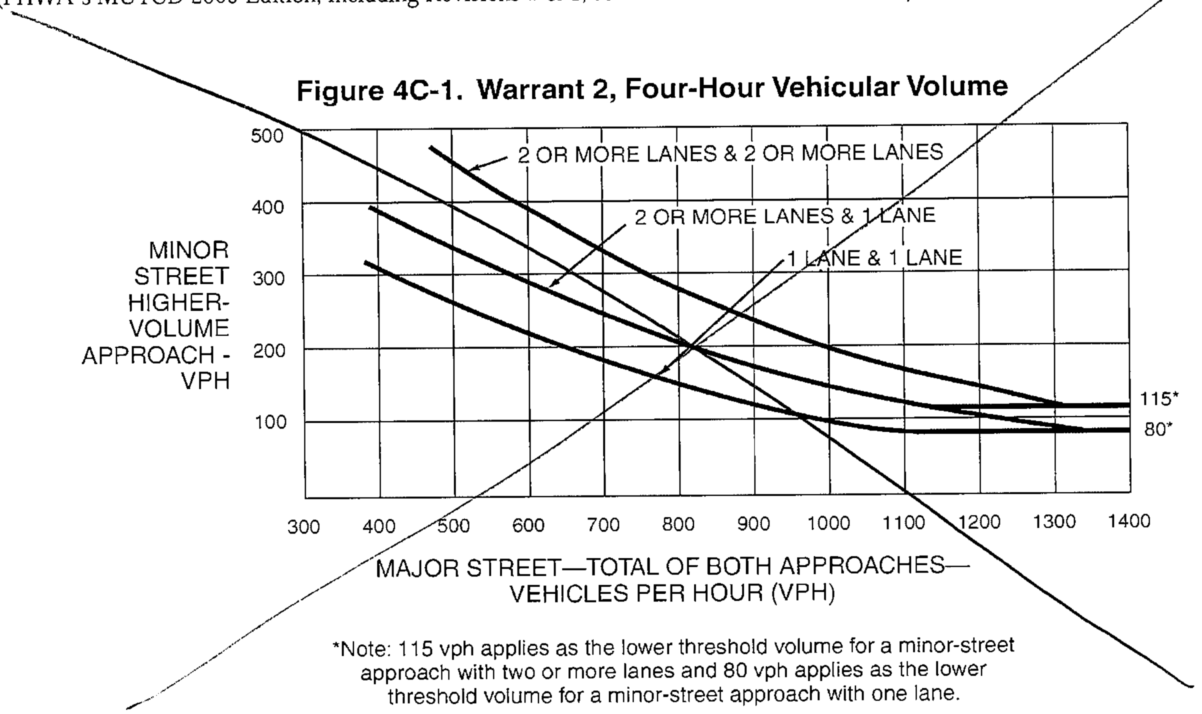
<u>PART B</u> **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	7:15-8:15 Hour
Both Approaches - Major Street	X		232
Higher Approach - Minor Street	X		100

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
<u>OR</u>, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

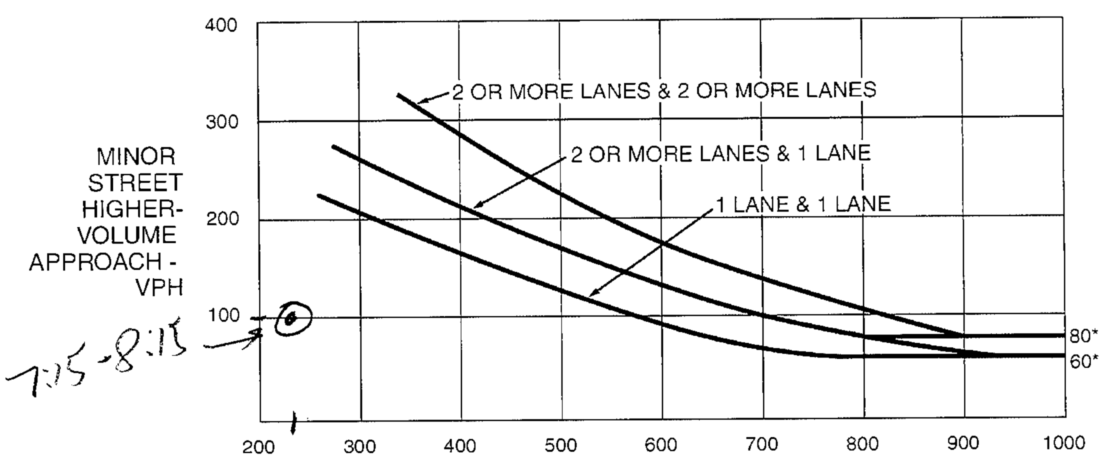
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

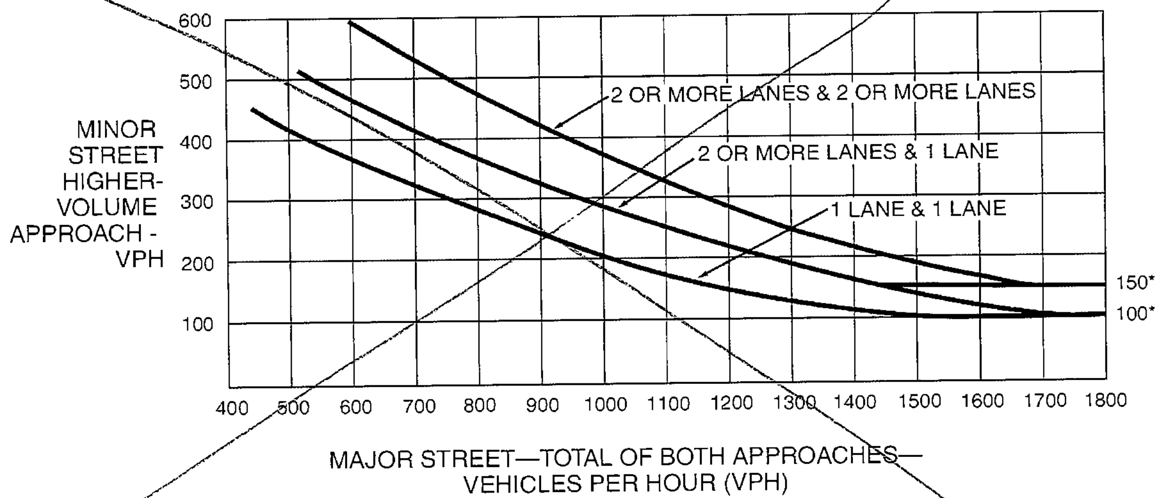
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

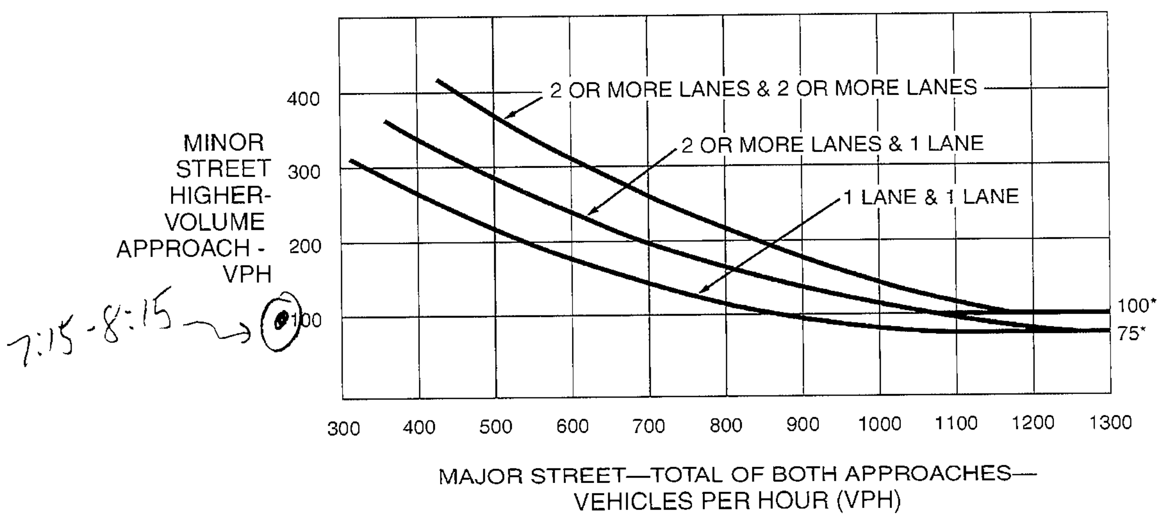
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 8-28-18
CALC VTR DATE 9-26-18
CHK ______ DATE ______

DIST ____ CO ____ RTE ____ PM ____

Major St: AVE 280 Critical Approach Speed >40 mph
Minor St: SR 99 SB Off Critical Approach Speed ______ mph

Speed limit or critical speed on major street traffic > 40 mph.......... ☒ or } RURAL (R)
In built up area of isolated community of < 10,000 population.......... ☐
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume

100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

100%   4 HOURS e 100%, 7 HRS e 80%

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour										
	U	R	U	R	7:15-8:15	2:30-3:30	3:30-4:30	4:30-5:30	6:45-7:45	7:45-8:45	1:15-2:15	2:15-3:15	3:15-4:15	4:15-5:15	5:15-6:15
APPROACH LANES	1		2 or More												
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	475	360	403	377	334	415	294	337	420	377	307
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	146	136	153	195	131	126	92	120	163	183	165

80%

Condition B - Interruption of Continuous Traffic

100% SATISFIED YES ☐ NO ☐
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R	80% 7:15-8:15	80% 3:00-4:00						
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	475	441						
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	146	150						

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7:15-8:15	2:30-3:30	3:30-4:30	4:30-5:30 Hour
Both Approaches - Major Street	X		475	360	403	377
Higher Approach - Minor Street	X		146	136	153	195

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u>, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

<u>PART A</u> **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☐	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. 621	Yes ☐	No ☒

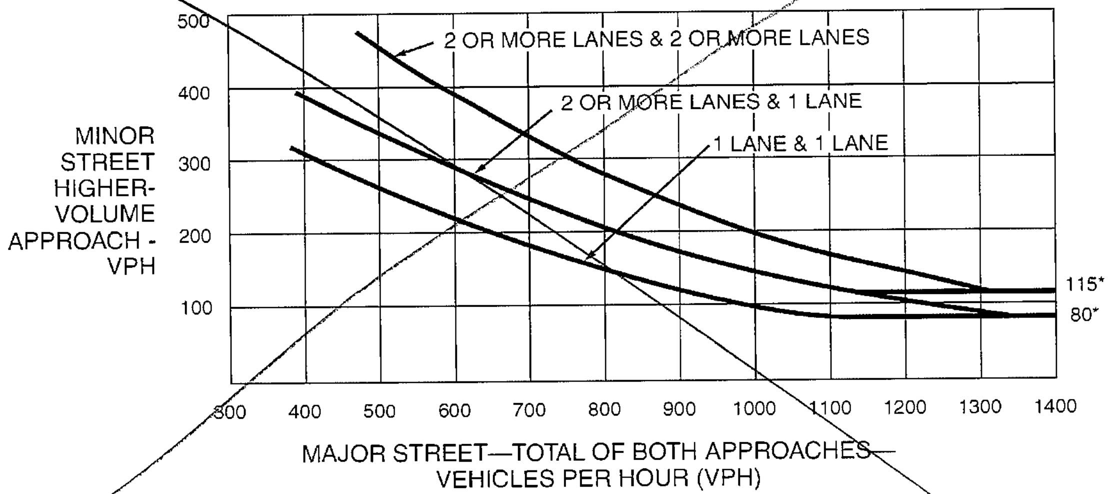
<u>PART B</u> **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	7:15-8:15 Hour
Both Approaches - Major Street	X		475
Higher Approach - Minor Street	X		146

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u>, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

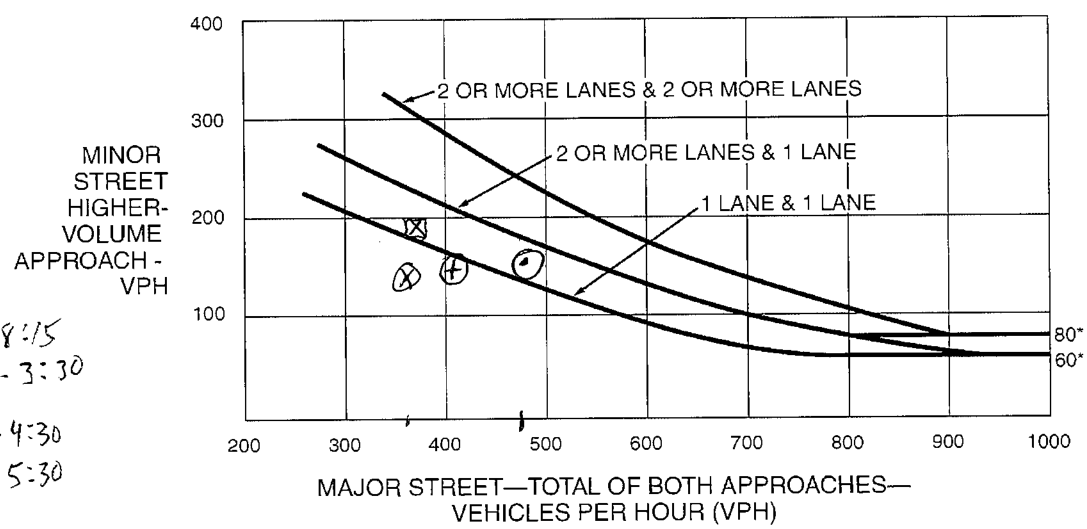
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

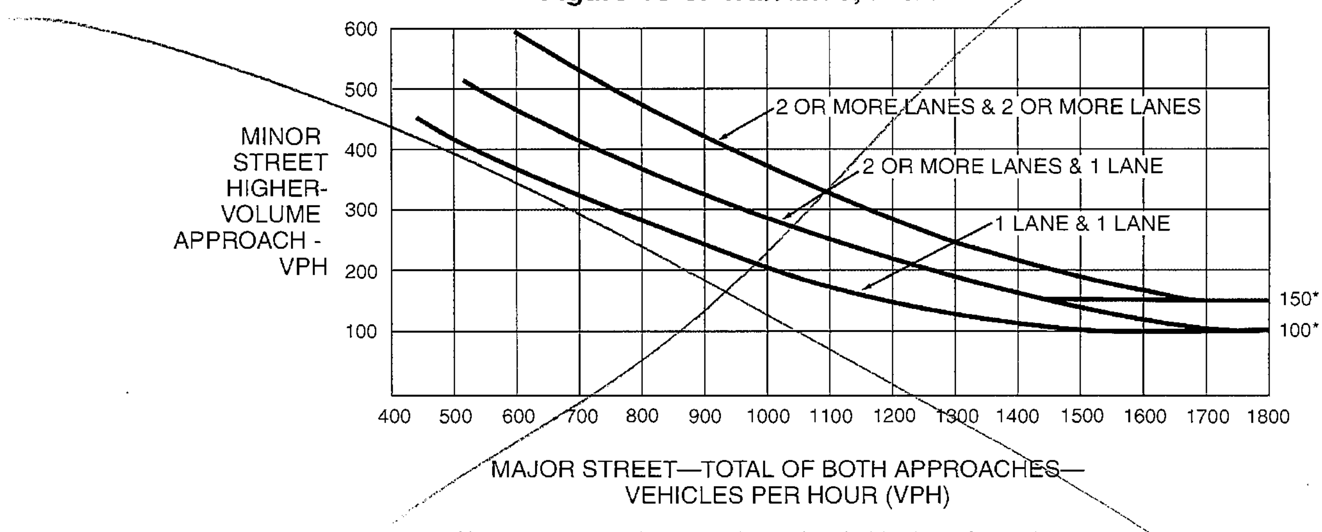


(•) 7:15 - 8:15
(X) 2:30 - 3:30
(+) 3:30 - 4:30
⊠ 4:30 - 5:30

*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

2 ABOVE 1/1 LINE

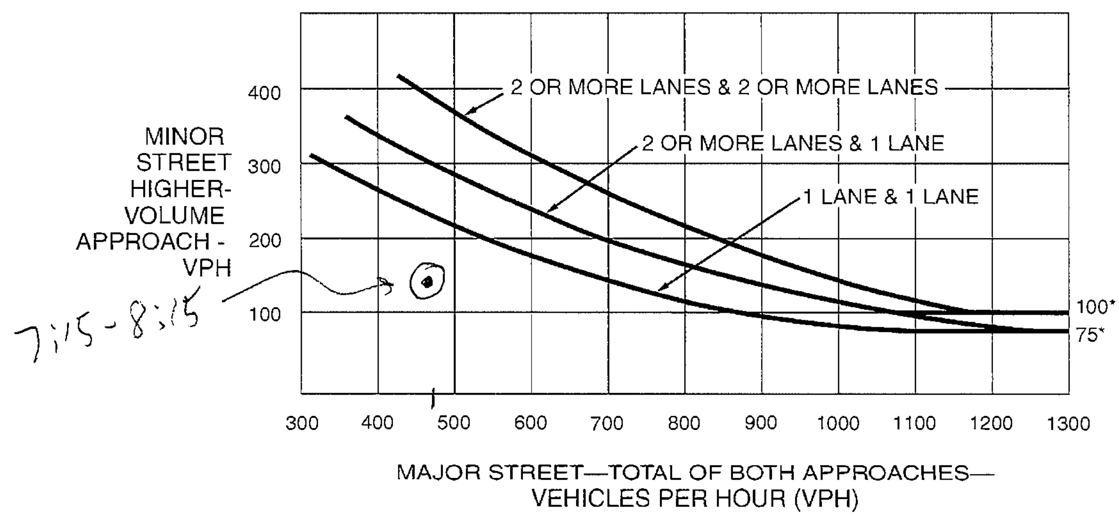
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 8-28-18
CALC JR DATE 9-26-18
CHK ______ DATE ______

DIST	CO	RTE	PM

Major St: AVE 280 Critical Approach Speed >40 MPH mph
Minor St: DRIVE 88 / DRIVE 85B Critical Approach Speed ______ mph

Speed limit or critical speed on major street traffic > 40 mph.......... ☒ or
In built up area of isolated community of < 10,000 population.......... ☐ } **RURAL (R)**
☐ **URBAN (U)**

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume **100% SATISFIED YES ☐ NO ☒**
80% SATISFIED YES ☐ NO ☐

* 8 HRS @ 100%
14 HRS @ 80%

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More		7:00-8:00	8:00-9:00	12:15-1:15	1:30-2:30	2:30-3:30	3:30-4:30	4:30-5:30	5:30-6:30 Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	587	468	355	405	484	563	571	448
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	139	113	105	115	150	165	174	122

Condition B - Interruption of Continuous Traffic **100% SATISFIED YES ☐ NO ☐**
80% SATISFIED YES ☐ NO ☐

** 5 @ 100%
6 @ 80%

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More									Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B **SATISFIED YES ☐ NO ☐**

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

* IF AVE 280 = 2 OR MORE LANES, 6 HRS @ 100%
11 HRS @ 80%

** IF AVE 280 = 2 LANES: 1 HR @ 100%
5 HRS @ 80%

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☒ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7:00-8:00	2:30-3:30	3:30-4:30	4:30-5:30	Hour
Both Approaches - Major Street	X		587	484	563	571	
Higher Approach - Minor Street	X		139	150	165	174	

SATISFIED FOR ONE LANE. 3 POINTS FOR 2 LANE/1 LANE

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☒ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. 810	Yes ☒ No ☐

PART B **SATISFIED YES ☒ NO ☐**

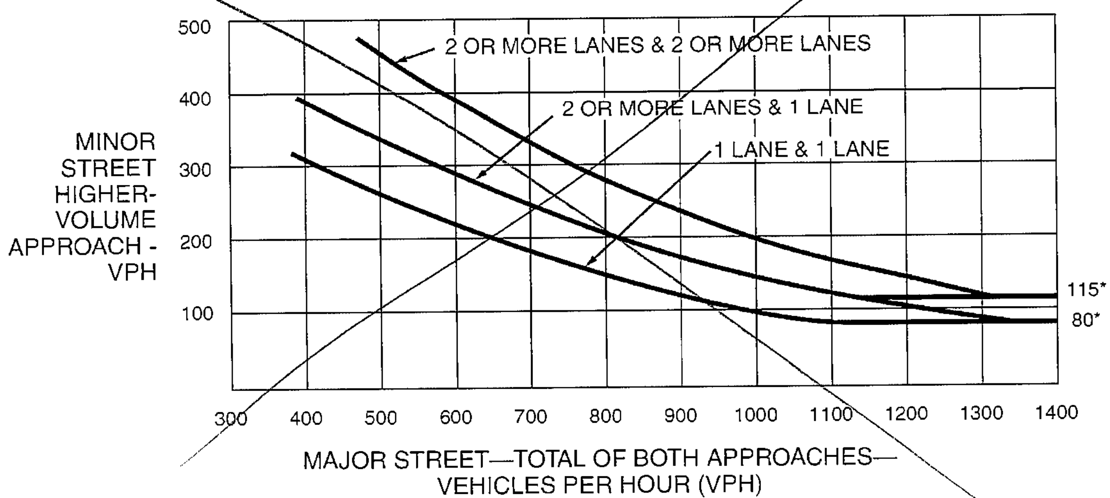
APPROACH LANES	One	2 or More	7:15-8:15	Hour
Both Approaches - Major Street	X		634	
Higher Approach - Minor Street	X		159	

SATISFIED FOR 1/1
NOT SATISFIED FOR 2/1

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

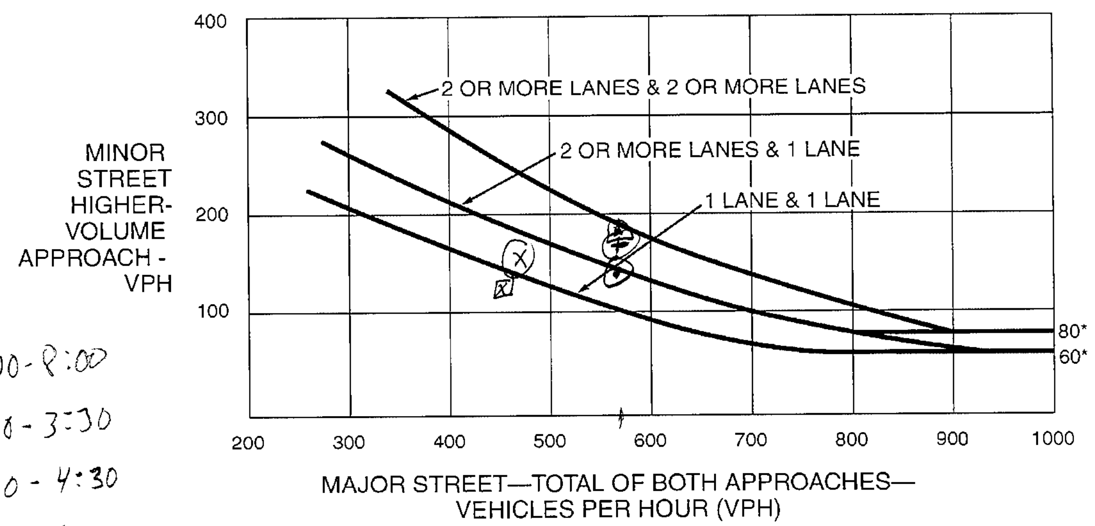
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

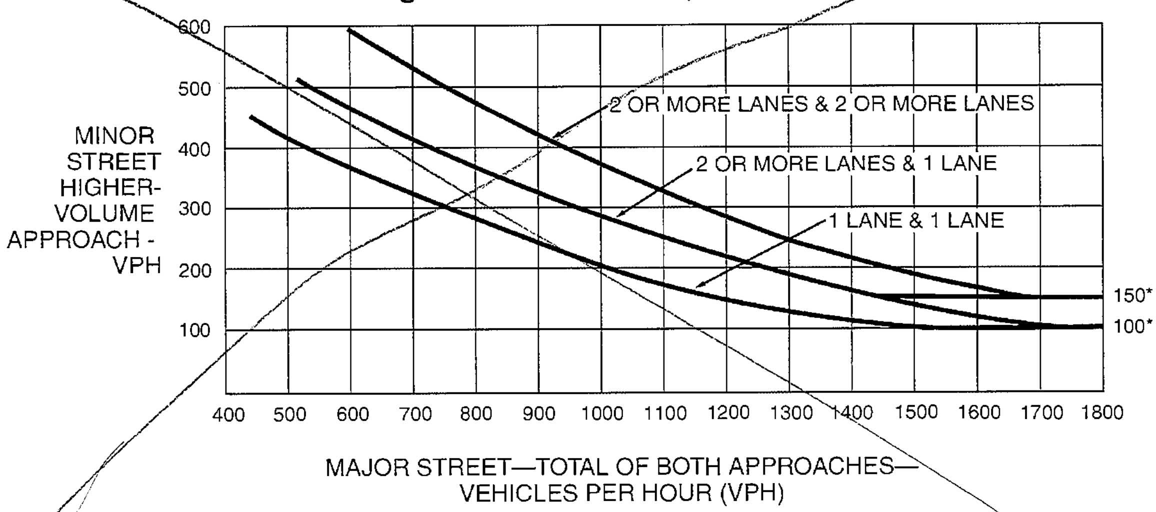
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



7:00-8:00
2:30-3:30
3:30-4:30
4:30-5:30
5:30-6:30

*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

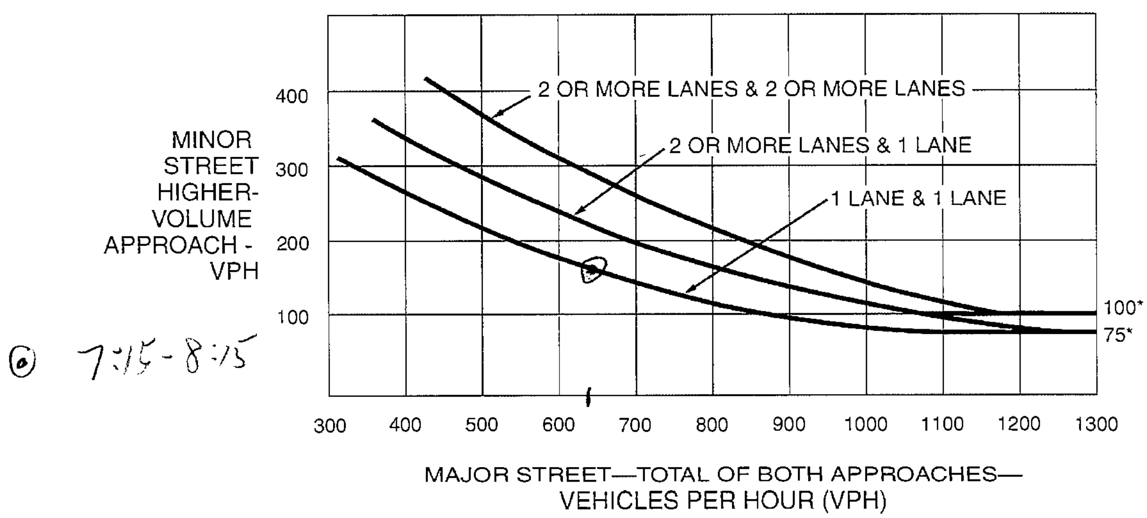
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

COUNT DATE 8-28-18
CALC JR DATE 9-26-18
CHK ______ DATE ______

DIST ____ CO ____ RTE ____ PM ____

Major St: SR 99 NB OFF / DR. 88 Critical Approach Speed < 40 mph
Minor St: DRIVE 88 Critical Approach Speed > 40 mph

Speed limit or critical speed on major street traffic > 40 mph ☒ or
In built up area of isolated community of < 10,000 population ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R	6:30-7:30							
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	338							
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	84							

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

NONE SATISFIED

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Hour							
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7:15-8:15			Hour
Both Approaches - Major Street			407			
Higher Approach - Minor Street			81			

NONE MET

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
<u>OR</u>, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

<u>PART A</u> **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☐ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches. 488	Yes ☐ No ☒

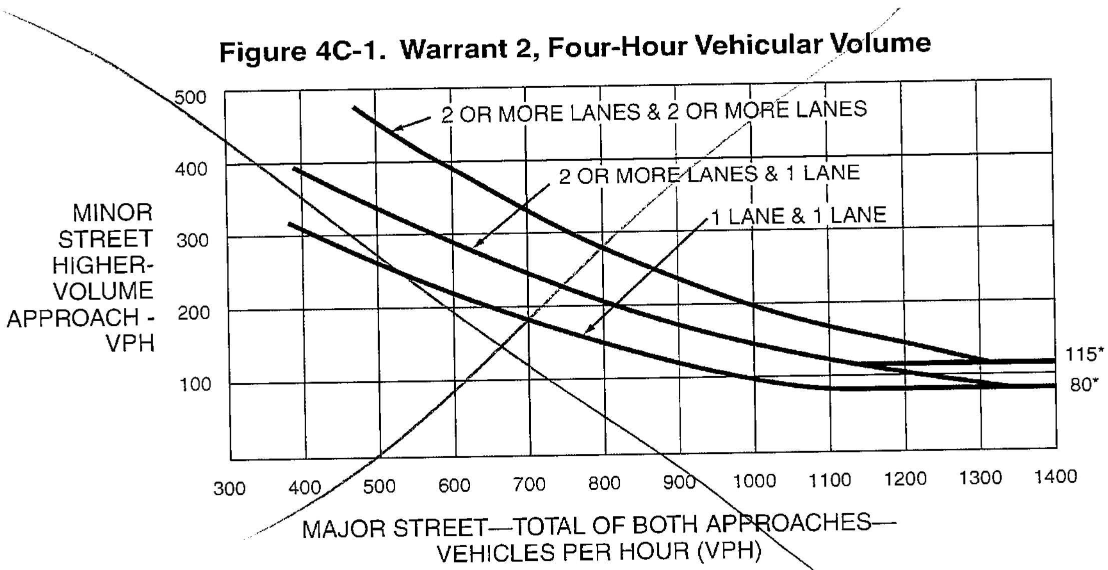
<u>PART B</u> **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	7:15-8:15 Hour
Both Approaches - Major Street	X		407
Higher Approach - Minor Street	X		81

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
<u>OR</u>, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

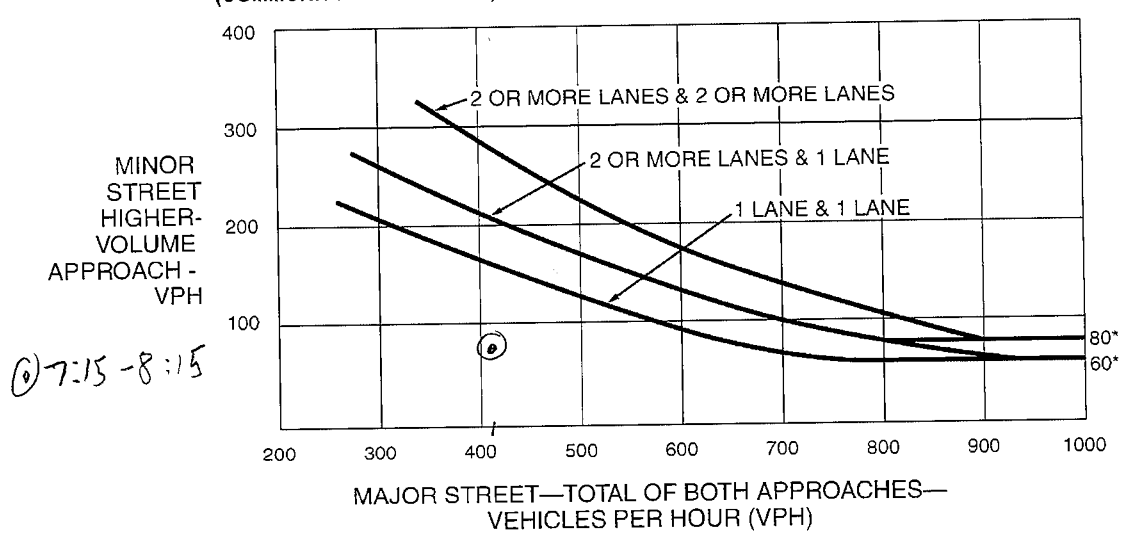
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

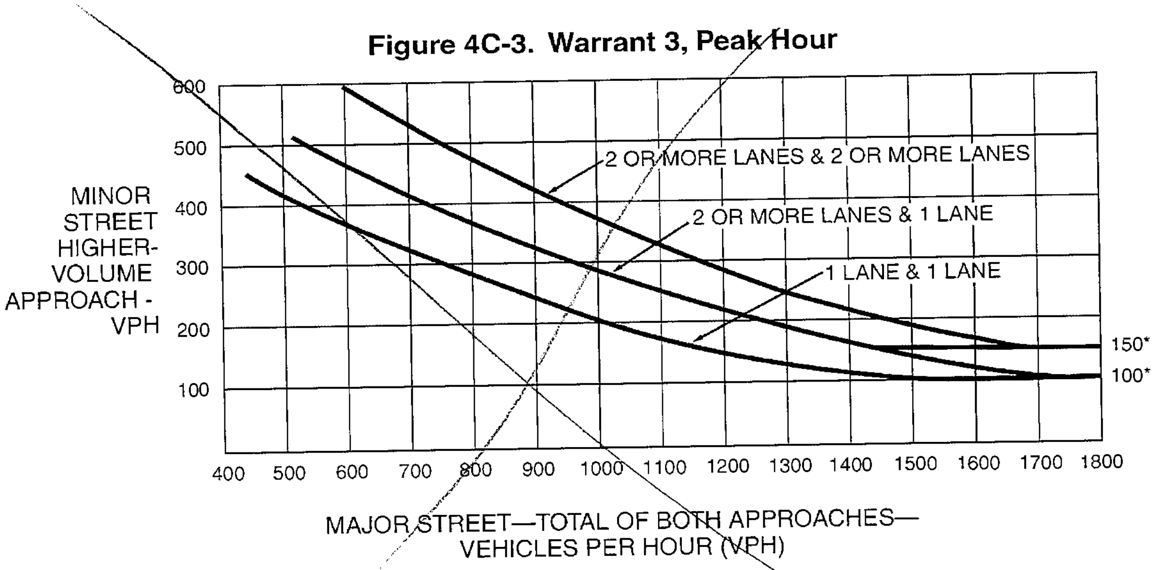
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

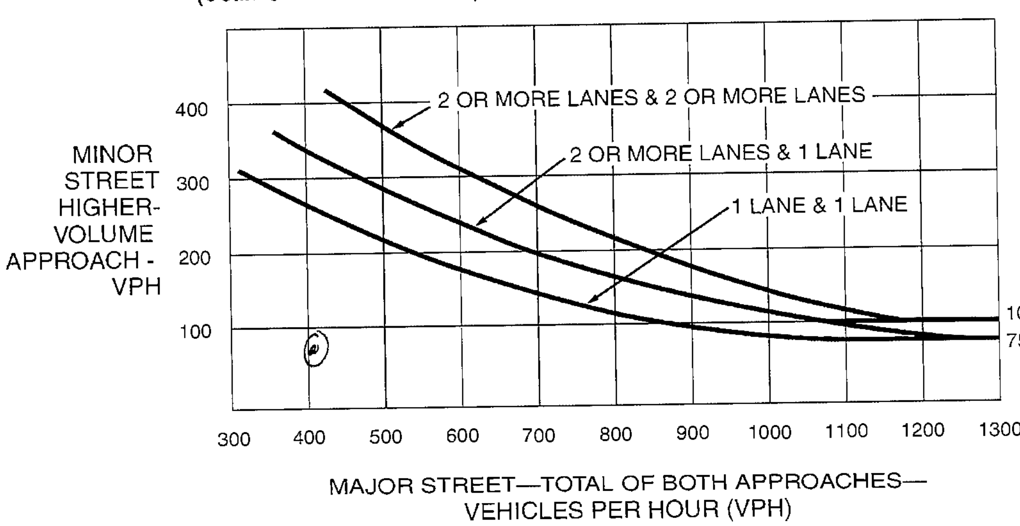
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX E

MITIGATED INTERSECTION ANALYSIS SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	225	81	127	247	0	0	0	0	118	2	75
Future Volume (veh/h)	0	225	81	127	247	0	0	0	0	118	2	75
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0				1827	1827	1900
Adj Flow Rate, veh/h	0	321	116	153	298	0				104	33	80
Adj No. of Lanes	0	2	0	2	2	0				1	1	0
Peak Hour Factor	0.70	0.70	0.70	0.83	0.83	0.83				0.94	0.94	0.94
Percent Heavy Veh, %	0	4	4	4	4	0				4	4	4
Cap, veh/h	0	755	268	394	1940	0				274	75	181
Arrive On Green	0.00	0.30	0.30	0.12	0.56	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	2605	892	3375	3563	0				1740	474	1150
Grp Volume(v), veh/h	0	220	217	153	298	0				104	0	113
Grp Sat Flow(s),veh/h/ln	0	1736	1670	1688	1736	0				1740	0	1624
Q Serve(g_s), s	0.0	3.2	3.3	1.3	1.3	0.0				1.7	0.0	2.0
Cycle Q Clear(g_c), s	0.0	3.2	3.3	1.3	1.3	0.0				1.7	0.0	2.0
Prop In Lane	0.00		0.53	1.00		0.00				1.00		0.71
Lane Grp Cap(c), veh/h	0	521	502	394	1940	0				274	0	256
V/C Ratio(X)	0.00	0.42	0.43	0.39	0.15	0.00				0.38	0.00	0.44
Avail Cap(c_a), veh/h	0	2269	2183	2287	7382	0				1836	0	1714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.9	8.9	13.0	3.4	0.0				12.0	0.0	12.1
Incr Delay (d2), s/veh	0.0	0.5	0.6	0.6	0.0	0.0				0.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.6	0.7	0.6	0.0				0.9	0.0	1.0
LnGrp Delay(d),s/veh	0.0	9.4	9.5	13.6	3.4	0.0				12.8	0.0	13.3
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		437			451						217	
Approach Delay, s/veh		9.5			6.9						13.1	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			8.2	14.0		9.5		22.2
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			21.5	41.5		33.5		67.5
Max Q Clear Time (g_c+I1), s			3.3	5.3		4.0		3.3
Green Ext Time (p_c), s			0.4	4.2		1.0		4.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Notes

Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	437	153	298	108	100
v/c Ratio	0.45	0.22	0.17	0.29	0.25
Control Delay	12.7	16.0	4.7	16.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	16.0	4.7	16.6	7.7
Queue Length 50th (ft)	36	14	13	21	4
Queue Length 95th (ft)	55	35	27	61	34
Internal Link Dist (ft)	1834		700		949
Turn Bay Length (ft)		500			
Base Capacity (vph)	3216	2032	3471	1396	1293
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.08	0.09	0.08	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	176	61	101	121	0	0	0	0	183	4	20
Future Volume (veh/h)	0	176	61	101	121	0	0	0	0	183	4	20
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0				1827	1827	1900
Adj Flow Rate, veh/h	0	196	68	126	151	0				229	0	0
Adj No. of Lanes	0	2	0	2	2	0				2	1	0
Peak Hour Factor	0.90	0.90	0.90	0.80	0.80	0.80				0.89	0.89	0.89
Percent Heavy Veh, %	0	4	4	4	4	0				4	4	4
Cap, veh/h	0	542	182	380	1698	0				635	333	0
Arrive On Green	0.00	0.21	0.21	0.11	0.49	0.00				0.18	0.00	0.00
Sat Flow, veh/h	0	2643	859	3375	3563	0				3480	1827	0
Grp Volume(v), veh/h	0	131	133	126	151	0				229	0	0
Grp Sat Flow(s),veh/h/ln	0	1736	1675	1688	1736	0				1740	1827	0
Q Serve(g_s), s	0.0	1.8	1.9	0.9	0.6	0.0				1.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	1.9	0.9	0.6	0.0				1.6	0.0	0.0
Prop In Lane	0.00		0.51	1.00		0.00				1.00		0.00
Lane Grp Cap(c), veh/h	0	369	356	380	1698	0				635	333	0
V/C Ratio(X)	0.00	0.36	0.37	0.33	0.09	0.00				0.36	0.00	0.00
Avail Cap(c_a), veh/h	0	2628	2537	2648	8550	0				4254	2233	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	9.2	9.2	11.2	3.7	0.0				9.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.5	0.0	0.0				0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.9	0.5	0.3	0.0				0.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	9.8	9.9	11.7	3.8	0.0				10.1	0.0	0.0
LnGrp LOS		A	A	B	A					B		
Approach Vol, veh/h		264			277						229	
Approach Delay, s/veh		9.8			7.4						10.1	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs			3	4		6		8
Phs Duration (G+Y+Rc), s			7.6	10.3		9.5		17.9
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s			21.5	41.5		33.5		67.5
Max Q Clear Time (g_c+I1), s			2.9	3.9		3.6		2.6
Green Ext Time (p_c), s			0.3	2.2		0.8		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Notes

Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	264	126	151	117	115
v/c Ratio	0.32	0.18	0.09	0.29	0.29
Control Delay	11.4	14.3	4.7	14.8	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	14.3	4.7	14.8	13.7
Queue Length 50th (ft)	18	11	6	21	17
Queue Length 95th (ft)	45	26	14	56	53
Internal Link Dist (ft)	1834		700		949
Turn Bay Length (ft)		500			
Base Capacity (vph)	3307	2193	3471	1489	1467
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.04	0.08	0.08

Intersection Summary

APPENDIX G

NOTICE OF PREPARATION PROCESS

APPENDIX G.1

NOP TRACKING SHEET

NOTICE OF PREPARATION
Dunn Asphalt & Concrete Batch Plant (PSP 18-049)– SCH# 2019011039

AGENCY / ENTITY	DOCUMENTS SENT					DELIVERY METHOD					COMMENTS RECEIVED
	Hard Copy			CD							
	Cover Letter	NOC	NOP	Electronic Submittal Form	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
AVAILABILITY OF PUBLIC VIEWING											
Tulare County Resource Management Agency 5961 S. Mooney Blvd. Visalia, CA 93277-9394			X			1/18/19					
Tulare County Website: http://tularecounty.ca.gov/rma/index.cfm/projects/planning-projects/applicant-projects/dunn-asphalt-and-concrete-batch-plant/											
STATE CLEARINGHOUSE (Agencies below were marked with "X" on the NOC)	X	X	15					1/17/19 813792804227			1/18/19, OPR distributed the NOP to State agencies
• Air Resources Board											No Response Received
• California Highway Patrol											No Response Received
• Caltrans District #6											See Below
• Caltrans Planning											No Response Received
• Department of Conservation											1/29/19, letter received from Monique Wilber, with recommendations for the discussion in the Ag Resources section of the EIR
• Department of Fish and Wildlife Region #4											No Response Received
• Department of Food and Agriculture											No Response Received
• Department of Forestry and Fire Protection											No Response Received
• Native American Heritage Commission											1/25/19, letter received from Sharaya Souza regarding requirements for compliance with SB 18 and AB 52
• Regional Water Quality Control Board District #5F											No Response Received
• Resources Agency											No Response Received
• State Water Resources Control Board – Water Quality											No Response Received
• Department of Toxic Substances Control											No Response Received
• CalRecycle – Recycling and Recovery											No Response Received
FEDERAL AGENCIES											
Federal Aviation Administration 4955 E. Anderson Fresno, CA 93727 (559) 454-0286			X						1/18/19 70142870000108471006	1/22/19	HGuerra 2/19/19: per phone conversation with Brian Smith of FAA Fresno, the MND does not need to be submitted to them.
U.S. Army Corps of Engineers Sacramento District 1325 J Street, Room 1350 Sacramento, CA 95814-2922			X						1/18/19 70142870000108471013	1/22/19	No Response Received
United States Department of Agriculture Natural Resources Conservation Service Visalia Service Center 3530 W. Orchard Ct. Visalia, CA 93277-7055			X						1/18/19 70142870000108471020	1/22/19	No Response Received
United States Fish and Wildlife Service Sacramento Fish & Wildlife Office 2800 Cottage Way, Room W-2605 Sacramento, CA 95825-1846			X						1/18/19 70142870000108471037	1/22/19	No Response Received
Natural Resources Conservation Service 1400 Independence Ave SW Room 5105-A Washington, DC 20250-1111			X						1/18/19 70142870000108471044	1/24/19 green receipt never returned but USPS website shows as delivered	No Response Received
Natural Resources Conservation Service Visalia Service Center 3530 W. Orchard Ct. Visalia, CA 93277-7055			X						1/18/19 70142870000108471051	1/22/19	No Response Received

NOTICE OF PREPARATION
Dunn Asphalt & Concrete Batch Plant (PSP 18-049)– SCH# 2019011039

AGENCY / ENTITY	DOCUMENTS SENT – Hard Copy – Cover Letter	DOCUMENTS SENT – Hard Copy – NOC	DOCUMENTS SENT – Hard Copy – NOP	DOCUMENTS SENT – CD – Electronic Submittal Form	DOCUMENTS SENT – CD – NOP	DELIVERY METHOD – Hand Delivered / Interoffice	DELIVERY METHOD – E-mail	DELIVERY METHOD – FedEx	DELIVERY METHOD – Certified US Mail	DELIVERY METHOD – Return Receipt	COMMENTS RECEIVED
STATE & REGIONAL AGENCIES											
California Department of Fish and Wildlife Region 4 – Central Region 1234 E. Shaw Avenue Fresno, CA 93710 JVANCE@dfg.ca.gov Craig.Bailey@wildlife.ca.gov Jennifer.Giannetta@wildlife.ca.gov			X				1/18/19		1/18/19 70142870000108471068	1/22/19	No Response Received
California Department of Transportation, District 6 Mike Navarro, Chief, Planning Branch 1352 W. Olive Ave P.O. Box 12616 Fresno, CA 93778-2616 michael.navarro@dot.ca.gov			X				1/18/19		1/18/19 70142870000108471075	1/22/19	No Response Received
California Department of Transportation, District 6 David Deel, Associate Transportation Planner 1352 W. Olive Ave P.O. Box 12616 Fresno, CA 93778-2616 david.deel@dot.ca.gov			X				1/18/19		1/18/19 70142870000108471082	1/22/19	2/15/19, Letter received providing recommendations for the TIS
Regional Water Quality Control Board Region 5F – Central Valley Attn: Doug Patteson 1685 E Street Fresno, CA 93706 Doug.Patteson@waterboards.ca.gov			X				1/18/19		1/18/19 70142870000108471099	1/22/19	No Response Received
San Joaquin Valley Unified Air Pollution Control District 1990 E. Gettysburg Ave. Fresno, CA 93726 CEQA@valleyair.org Patia.Siong@valleyair.org Brian.Clements@valleyair.org			X				1/18/19		1/18/19 70142870000108471105	1/29/19	2/20/19, letter received from Brian Clements regarding emissions analysis, health risk analysis, ambient air quality analysis, and Air District regulations
LOCAL AGENCIES											
City of Visalia Attn: City Manager 220 N. Santa Fe Street Visalia, CA 93292			X						1/18/19 70142870000108471112	1/22/19	No Response Received
City of Visalia Planning Department Attn: Paul Bernal, City Planner 315 E. Acequia Avenue Visalia, CA 93291 Paul.Bernal@visalia.city			X						1/18/19 70142870000108471129	1/22/19	No Resp onse Received
City of Tulare Attn: City Manager 411 E. Kern Avenue Tulare, CA 93274			X						1/18/19 70142870000108471136	1/22/19	No Response Received
City of Tulare Community Development Attn: Josh McDonnell, Director 411 E. Kern Ave. Tulare, CA 93274 jmcdonnell@tulare.ca.gov			X						1/18/19 70142870000108471143	1/22/19	No Response Received

NOTICE OF PREPARATION
Dunn Asphalt & Concrete Batch Plant (PSP 18-049)– SCH# 2019011039

AGENCY / ENTITY	DOCUMENTS SENT					DELIVERY METHOD					COMMENTS RECEIVED
	Hard Copy			CD							
	Cover Letter	NOC	NOP	Electronic Submittal Form	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
County of Kings Community Development Agency Planning Division Attn: Toni Leist/Sydney Highfill 1400 W. Lacey Blvd. #6 Hanford, CA 93230			X						1/18/19 70142870000108471150	1/22/19	No Response Received
Tulare County Agricultural Commissioner 4437 S. Laspina Street Tulare CA 93274			X						1/18/19 70162070000049837202	1/22/19	No Response Received
Tulare County Airport Land Use Commission • Bill Whitlatch • Steve Dwelle							1/18/19 (VQuiroz sent email)			---	No Response Received
Tulare County Association of Governments Attn: Ted Smalley, Executive Director 210 N. Church Street, Suite B Visalia, CA 93291			X						1/18/19 70162070000049837219	1/22/19	No Response Received
Tulare County Farm Bureau Attn: Tricia Stever Blattler, Executive Director P.O. Box 748 Visalia, CA 93291			X						1/18/19 70162070000049837226	1/29/19	No Response Received
Tulare County Fire Warden 835 S. Akers Street Visalia, CA 93277			X			1/18/19					No Response Received
Tulare County Health and Human Services Agency Environmental Health Department Attn: Allison Shuklian 5957 S. Mooney Blvd Visalia, CA 93277			X			1/18/19					1/31/19, letter received from Ted Martin regarding potential Hazardous Materials Business Plan and Solid Waste Facility Permit
Tulare County Local Agency Formation Commission 210 N. Church Street, Suite B Visalia, CA 93291			X			1/18/19					No Response Received
Tulare County Office of Emergency Services Attn: Sabrina Bustamonte / David Le 5957 S. Mooney Blvd Visalia, CA 93277			X			1/18/19					No Response Received
Tulare County RMA – Flood Control Attn: Ross Miller			X			1/18/19					No Response Received
Tulare County RMA – Tulare County Fire Attn: Gilbert Portillo / John Meyer			X			1/18/19					No Response Received
Tulare County RMA – Public Works Attn: Hernan Beltran / Johnny Wong			X			1/18/19					No Response Received
Tulare County Resources Conservation District 3530 W. Orchard Ct Visalia, CA 93277			X						1/18/19 70162070000049836588	1/22/19	No Response Received
Tulare County Sheriff Headquarters 2404 W. Burrel Avenue Visalia, CA 93291			X			1/18/19					No Response Received
Tulare County UC Cooperative Extension 4437 S. Laspina Street Tulare, CA 93274			X						1/18/19 70162070000049836595	1/22/19	No Response Received

NOTICE OF PREPARATION
Dunn Asphalt & Concrete Batch Plant (PSP 18-049)– SCH# 2019011039

AGENCY / ENTITY	DOCUMENTS SENT					DELIVERY METHOD					COMMENTS RECEIVED
	Hard Copy			CD							
	Cover Letter	NOC	NOP	Electronic Submittal Form	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
Tulare Irrigation District Aaron Sukeda, General Manager PO Box 1920 Tulare, CA 93274			X						1/18/19 70162070000049836533	Unknown – green receipt never returned and USPS website shows in-transit still as of 11/26/19 and	No Response Received
TRIBES											
Kern Valley Indian Council Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240			X						1/18/19 70162070000049836601	1/23/19 There is another one sent to the same person ending in 7233	No Response Received
Kern Valley Indian Council Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240			X						1/18/19 70162070000049836472	1/23/19	No Response Received
Santa Rosa Rancheria Tachi Yokut Tribe Rueben Barrios Sr., Chairperson P. O. Box 8 Lemoore, CA 93245			X						1/18/19 70162070000049836489	1/22/19	No Response Received
Santa Rosa Rancheria Tachi Yokut Tribe Shana Powers, Cultural Specialist P. O. Box 8 Lemoore, CA 93245			X						1/18/19 70162070000049836496	1/22/19	No Response Received
Santa Rosa Rancheria Tachi Yokut Tribe Greg Cuara, Cultural Specialist P. O. Box 8 Lemoore, CA 93245			X						1/18/19 70162070000049836502	1/22/19	No Response Received
Torres Martinez Desert Cahuilla Indians Michael Mirelez, Cultural Resource Coordinator P. O. Box 1160 Thermal, CA 92274			X						1/18/19 70162070000049836519	1/22/19	No Response Received
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 226 Lake Isabella, CA 93240			X						1/18/19 70162070000049836526	---	2/8/19 NOTICE RETURNED: "Return to sender, Unclaimed, Unable to forward" 2/21/19 RKashiwa and CChi called number on record (760 223-3918) and left message but nobody returned call. The also called the phone number obtained from website (760 379-4590) but the person answering said it was a wrong number.
Tule River Indian Tribe Neil Peyron, Chairperson P. O. Box 589 Porterville, CA 93258			X						1/18/19 70142870000108470917	1/23/19 USPS website shows in-transit still as of 11/26/19	No Response Received

NOTICE OF PREPARATION
Dunn Asphalt & Concrete Batch Plant (PSP 18-049)– SCH# 2019011039

AGENCY / ENTITY	DOCUMENTS SENT					DELIVERY METHOD					COMMENTS RECEIVED
	Hard Copy			CD							
	Cover Letter	NOC	NOP	Electronic Submittal Form	NOP	Hand Delivered / Interoffice	E-mail	FedEx	Certified US Mail	Return Receipt	
Tule River Indian Tribe Environmental Department Kerri Vera, Director P. O. Box 589 Porterville, CA 93258			X						1/18/19 70142870000108470900	1/23/19 USPS website shows in-transit still as of 11/26/19	No Response Received
Tule River Indian Tribe Environmental Department Felix Christman, Tribal Monitor P. O. Box 589 Porterville, CA 93258			X						1/18/19 70142870000108470924	1/23/19 USPS website shows in-transit still as of 11/26/19	No Response Received
Wuksachi Indian Tribe Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906			X						1/18/19 70142870000108470931	1/23/19	No Response Received
OTHER INTERESTED PARTIES											
4Creeks, Inc. 324 S. Santa Fe St. Visalia, CA 93292 Attn: Richard Walker richardw@4-creeks.com			X						1/18/19 70142870000108470948	1/23/19	No Response Received
Dunn's Equipment Inc. Attn: Mark Dunn 303 N. Ben Maddox Way Visalia, CA 93292			X						1/18/19 70142870000108470955	1/22/19	No Response Received
Southern California Edison Attn: Calvin Rossi, Region Manager Local Public Affairs 2425 S. Blackstone St. Tulare, CA 93274			X						1/18/19 70142870000108470962	1/23/19	No Response Received
Southern California Gas Company 404 N. Tipton Street Visalia, CA 93292			X						1/18/19 70142870000108470979	1/28/19	No Response Received
La Joya Middle School Attn: Travis Hambleton, Principal 4711 W. La Vida Ave. Visalia, CA 93277			X						1/18/19 70142870000108470986	1/22/19	No Response Received
Linwood Elementary School Attn: Natalie Taylor, Principal 3129 S. Linwood Street Visalia, CA 93277			X						1/18/19 70142870000108470993	1/22/19	No Response Received
Sequoia Baptist Academy 3435 S. Linwood St. Visalia, CA 93277			X						1/18/19 70162070000049836540	1/22/19	No Response Received
Visalia Christian Schools 3737 S. Akers St. Visalia, CA 93277			X						1/18/19 70162070000049836557	---	1/24/19 NOTICE RETURNED: "Return to sender. Refused unable to forward."
Visalia Montessori School 3502 S. Linwood St. Visalia, CA 93277			X						1/18/19 70162070000049836564	1/22/19	No Response Received
Visalia Unified School District Attn: Todd Oto, Superintendent 5000 W. Cypress Ave. Visalia, CA 93277			X						1/18/19 70162070000049836571	1/22/19	No Response Received

APPENDIX G.2

NOTICE OF PREPARATION

RESOURCE MANAGEMENT AGENCY

5961 South Mooney Blvd
Visalia, CA 93277
Phone (559) 624-7000
Fax (559) 730-2653

Michael Washam — Economic Development and Planning
Reed Schenke — Public Works
Sherman Dix — Fiscal Services

REED SCHENKE, DIRECTOR
MICHAEL WASHAM, ASSOCIATE DIRECTOR

January 18, 2019

State Clearinghouse
1400 Tenth Street, Room 100
Sacramento, CA 95814

Re: Notice of Preparation (NOP) and Notice of Completion (NOC) Submittals for the Dunn Asphalt and Concrete Batch Plant (PSP 18-049)

Attn: State Clearinghouse:

Attached are the NOC and 15 copies of the NOP for the above referenced project. Tulare County respectfully requests to have the State Clearinghouse distribute the notices to the agencies denoted with an "X" on the attached NOC Reviewing Agencies Checklist.

The NOP will be made available on the County website on Friday, January 18, 2019, at:
http://tularecounty.ca.gov/rma/index.cfm/projects/planning-projects/applicant-projects/dunn-asphalt-and-concrete-batch-plant/

If you have questions or need additional materials, please contact me by phone or email. Thank you for your assistance.

Sincerely,

Hector Guerra
Chief Environmental Planner
(559) 624-7121
hguerra@co.tulare.ca.us

Enclosures: Notice of Completion Form (1)
Notice of Preparation (15)

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Dunn Asphalt and Concrete Batch Plant (PSP 18-049)

Lead Agency: County of Tulare Resource Management Agency
Contact: Hector Guerra, Chief Environmental Planner
Mailing Address: 5961 S. Mooney Blvd.
Phone: 559-624-7121
City: Visalia   Zip: 93277-9394
County: Tulare County

Project Location: County: Tulare
City/Nearest Community: Visalia
Cross Streets: Avenue 280 and State Route 99
Zip Code: 93277
Latitude/Longitude: 36 ° 17 ' 52.80 " N / 119 ° 24 ' 00.08 " W
Total Acres: 20.0
Assessor's Parcel No: 119-010-039   Section: 8   Township: 19 S   Range: 24E   Base: MDBM
Within 2 Miles: State Hwy: SR 99   Waterways: Mill Creek
Airports: Visalia Municipal Airport   Railways: SPRR   Schools: Sycamore Valley Academy

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Document Type:

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.)______ ☐ Other: ______

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other ______

Local Action Type:

☐ General Plan Update
☐ General Plan Amendment
☐ General Plan Element
☐ Community Plan
☐ Specific Plan
☐ Master Plan
☐ Planned Unit Dev.
☐ Site Plan
☐ Rezone
☐ Pre-zone
☒ Use Permit
☐ Land Division (Sub.)
☐ Annexation
☐ Redevelopment
☐ Coastal Permit
☐ Other ______

Development Type:

☐ Residential: Units______ Acres______
☐ Office: Sq. ft. ______ Acres______ Employees ______
☐ Commercial: Sq. ft.______ Acres______ Employees ______
☒ Industrial: Sq. ft. ______ Acres 20.0 Employees 15-20
☐ Educational: ______
☐ Recreational: ______
☐ Water Facilities: Type ______ MGD______
☐ Transportation: Type______
☐ Mining: Mineral ______
☐ Power: Type ______ MW______
☐ Waste Treatment: Type ______ MGD ______
☐ Hazardous Waste: Type______
☒ Other: Asphalt & Concrete Batch Plant

Project Issues Discussed in Document:

☒ Aesthetic/Visual
☒ Agricultural Land
☒ Air Quality
☒ Archaeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☒ Economic/Jobs
☐ Fiscal
☒ Flood Plain/Flooding
☒ Forest Land/Fire Hazard
☒ Geologic/Seismic
☒ Minerals
☒ Noise
☒ Population/Housing Balance
☒ Public Services/Facilities
☒ Recreation/Parks
☒ Schools/Universities
☒ Septic Systems
☒ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☒ Solid/Waste
☒ Toxic/Hazardous
☒ Traffic/Circulation
☒ Vegetation
☒ Water Quality
☒ Water Supply/Groundwater
☒ Wetland/Riparian
☒ Growth Inducing
☒ Land Use
☒ Cumulative Effects
☒ Other: Tribal Cultural Res.

Present Land Use/Zoning/General Plan Designation:

Shop, Equipment Yard, and Farming / AE-40 (Extensive Agriculture – 40 Acre Minimum) / Agriculture

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Project Description:

See attached page.

Project Description

The Project consists of a concrete batch plant, recycling of concrete and asphalt, and a hot mix asphalt batch plant. The Project site is located on the south side of Avenue 280 west of State Route (SR) 99 and east of Road 76 in Tulare County, California. The site is not within the Sphere of Influence of the City of Visalia, which generally extends to the Avenue 280/SR 99 interchange.

The concrete batch plant is expected to produce 100,000 cubic yards of concrete per year. Aggregate, cement, and fly ash will be delivered to the site and ready-mix concrete will be delivered from the site. The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base; it is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site. The hot-mix asphalt (HMA) batch plant is expected to produce 125,000 tons of HMA per year. Aggregate, oil, and propane will be delivered to the site and HMA will be delivered from the site.

The Project would generate approximately 280 passenger car equivalent (PCE) trips during the morning peak travel periods, and 110 PCE trips during the evening peak travel periods. Site access will be provided via one main driveway connecting to the south side of Avenue 280 approximately 1,000 feet east of Road 76.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with an "X." If the document has already been sent to the agency, denote that with an "s."

X	Air Resources Board		Office of Emergency Services
	Boating & Waterways, Department of		Office of Historic Preservation
X	California Highway Patrol		Office of Public School Construction
X	Caltrans District # 6		Parks & Recreation, Department of
	Caltrans Division of Aeronautics		Pesticide Regulation, Department of
X	Caltrans Planning		Public Health, Department of
	Central Valley Flood Protection Board		Public Utilities Commission
	Cochella Valley Mtns. Conservancy	X	Regional WQCB # 5F (attn: Doug Patteson)
	Coastal Commission	X	Resources Agency
	Colorado River Board		S.F. Bay Conservation & Development Commission
X	Conservation, Department of		San Gabriel & Lower L.A. Rivers and Mtns Conservancy
	Corrections, Department of		San Joaquin River Conservancy
	Delta Protection Commission		Santa Monica Mountains Conservancy
	Education, Department of		State Lands Commission
	Energy Commission		SWRCB: Clean Water Grants
X	Fish & Wildlife Region # 4	X	SWRCB: Water Quality
X	Food & Agriculture, Department of		SWRCB: Water Rights
X	Forestry & Fire Protection, Department of		Tahoe Regional Planning Agency
	General Services, Department of	X	Toxic Substances Control, Department of
	Health Care Services, Department of		Water Resources, Department of
	Housing & Community Development	X	Other: Recycling and Recovery (Cal Recycle)
	Integrated Waste Management Board	S	Other: San Joaquin Valley Air Pollution Control District
X	Native American Heritage Commission	S	Other: City of Visalia / City of Tulare / County of Kings
S	Other: Federal Aviation Administration	S	Other: Tulare County Fire Warden
S	Other: U.S. Department of Agriculture - NRCS	S	Other: Tulare County HHSA – Environmental Health
S	Other: U.S. Army Corps of Engineers	S	Other: Tulare County Local Agency Formation Commission
S	Other: U.S. Fish and Wildlife Service	S	Other: Tulare County Office of Emergency Services
S	Other: U.S. Natural Resources Conservation Service	S	Other: Tulare County Resources Conservation District
S	Other: Tulare County Agricultural Commissioner	S	Other: Tulare County Sheriff's Office
S	Other: Tulare County Airport Land Use Commission	S	Other: Tulare County U.C. Cooperative Extension
S	Other: Tulare County Association of Governments	S	Other: Tulare Irrigation District
S	Other: Tulare County Farm Bureau		Other:

Local Public Review Period (to be filled in by lead agency)

Starting Date: January 18, 2019

Ending Date: February 19, 2019

Lead Agency (Complete if applicable):

Consulting Firm: 4Creeks, Inc.
Address: 324 S. Santa Fe St.
City/State/Zip: Visalia, CA 93292
Contact: Richard Walker
Phone: (559) 802-3052

Applicant: Dunn's Equipment Inc.
Address: 303 N. Ben Maddox Way
City/State/Zip: Visalia, CA 93292
Phone : (559) 734-5373

Signature of Lead Agency Representative: Hector Guerra
Hector Guerra, Chief Environmental Planner
Date: 1/17/19

Signature of Lead Agency Representative:
Reed Schenke, Director/Environmental Assessment Officer
Date: 1/17/19

Authority cited: Section 21083, public Resources Code. Reference: Section 21161, Public Resources Code.

NOTICE OF PREPARATION

To:	State Clearinghouse	From:	County of Tulare – RMA
	PO Box 3044/ 1400 Tenth St		5961 S Mooney Blvd
	Sacramento, CA 95814		Visalia CA 93277

Date:	January 18, 2019
Subject:	Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) and Scoping Meeting
Project Title:	Dunn Asphalt and Concrete Batch Plant (PSP 18-049)
Project Applicant:	County of Tulare
Project Location:	Physical Address: 7763 Avenue 280, Visalia, CA 93277; Assessor Parcel Number (APN): 119-010-039; Section/Township/Range: Portion of NW ¼ of S. 8 / T. 19 S / R. 24 E, MDB&M Latitude/Longitude: 36° 17' 52.80" N, 119° 24' 00.08" W

Tulare County Resource Management Agency (RMA) will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit(s) or other approval(s) for the project. In addition, please provide us with contact information of the person(s) in your agency that we may contact during the CEQA process.

The project description, location, and the potential environmental effects are contained in the attached materials. The NOP is also available on the County website at:
http://tularecounty.ca.gov/rma/index.cfm/projects/planning-projects/applicant-projects/dunn-asphalt-and-concrete-batch-plant/

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

A scoping meeting is scheduled for **Thursday, January 31, 2019, at 1:30 P.M.** in the Main Conference Room of the Tulare County Resource Management Agency at the address shown above.

Please direct your response to Hector Guerra, Chief Environmental Planner at the address shown above. He may be contacted by e-mail at hguerra@co.tulare.ca.us or by telephone at 559-624-7121.

Signature: Hector Guerra　　　Date: 1/17/19
Hector Guerra
Title: Chief Environmental Planner

Signature: 　　　Date: 1/17/19
Reed Schenke, P.E.
Title: RMA Director / Environmental Assessment Officer

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375

PROJECT DESCRIPTION: The full Project description, location, and identification of potential environmental effects are contained in the attached materials. In accordance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), the County of Tulare Resource Management Agency (RMA) will be preparing an Environmental Impact Report (EIR) to evaluate the environmental effects associated with the development of an asphalt and concrete batch plant (Project). The Project is being proposed by Dunn's Equipment, Inc. (Applicant) to produce up to 100,000 cubic yards of concrete per year of asphalt for retail/commercial sale on an approximately 20.0 acre site located south of Avenue 280 between Road 76 and State Route (SR) 99. The site is currently zoned as AE-40.

The concrete batch plant is expected to produce 100,000 cubic yards of concrete per year. Aggregate, cement, and fly ash will be delivered to the site and ready-mix concrete will be delivered from the site. The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base; it is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site. The hot-mix asphalt (HMA) batch plant is expected to produce 125,000 tons of HMA per year. Aggregate, oil, and propane will be delivered to the site and HMA will be delivered from the site. The Project would generate approximately 280 passenger car equivalent (PCE) trips during the morning peak travel periods, and 110 PCE trips during the evening peak travel periods. Site access will be provided via one main driveway connecting to the south side of Avenue 280 approximately 1,000 feet east of Road 76.

When operational, the proposed Project is proposing to operate Monday-Friday between 6:00 a.m. to 4:00 p.m., and 7:00 a.m. to 12:00 p.m. (noon) on Saturdays. Depending upon demand, summer hours may begin earlier than 6:00 a.m. A majority of the trips will occur between 7:00 a.m. and 9:00 a.m., and between 4:00 and 6:00 p.m. The Project would utilize approximately 15-20 employees and include an approximate 1,000 square foot office.

Figures included in this Notice:

Figure 1 – Regional and Vicinity Location
Figure 2 – Site Map

Potential Approvals Required:

The following agencies may have jurisdiction/interests concerning the proposed Project:

California Department of Fish and Wildlife
California Department of Forestry and Fire Protection (Cal Fire)
California Department of Transportation (Caltrans)
California Department of Toxic Substances Control (DTSC)
California Department of Resources and Recycling and Recovery (Cal Recycle)
City of Tulare
City of Visalia
County of Kings
County of Tulare Health and Human Services Agency
County of Tulare Resource Management Agencies (Fire, Flood, Public Works)

Federal Aviation Administration
Regional Water Quality Control Board
San Joaquin Valley Unified Air Pollution Control District
Tulare County Airport Land Use Commission
U.S. Fish and Wildlife Service

The following interested persons/parties are also included in this notification:

Richard Walker, 4Creeks, Inc.: richardw@4-creeks.com

If you require additional information related to this notice, please contact:

Hector Guerra, Chief Environmental Planner at:
E-mail: hguerra@co.tulare.ca.us; or
Phone: (559) 624-7121

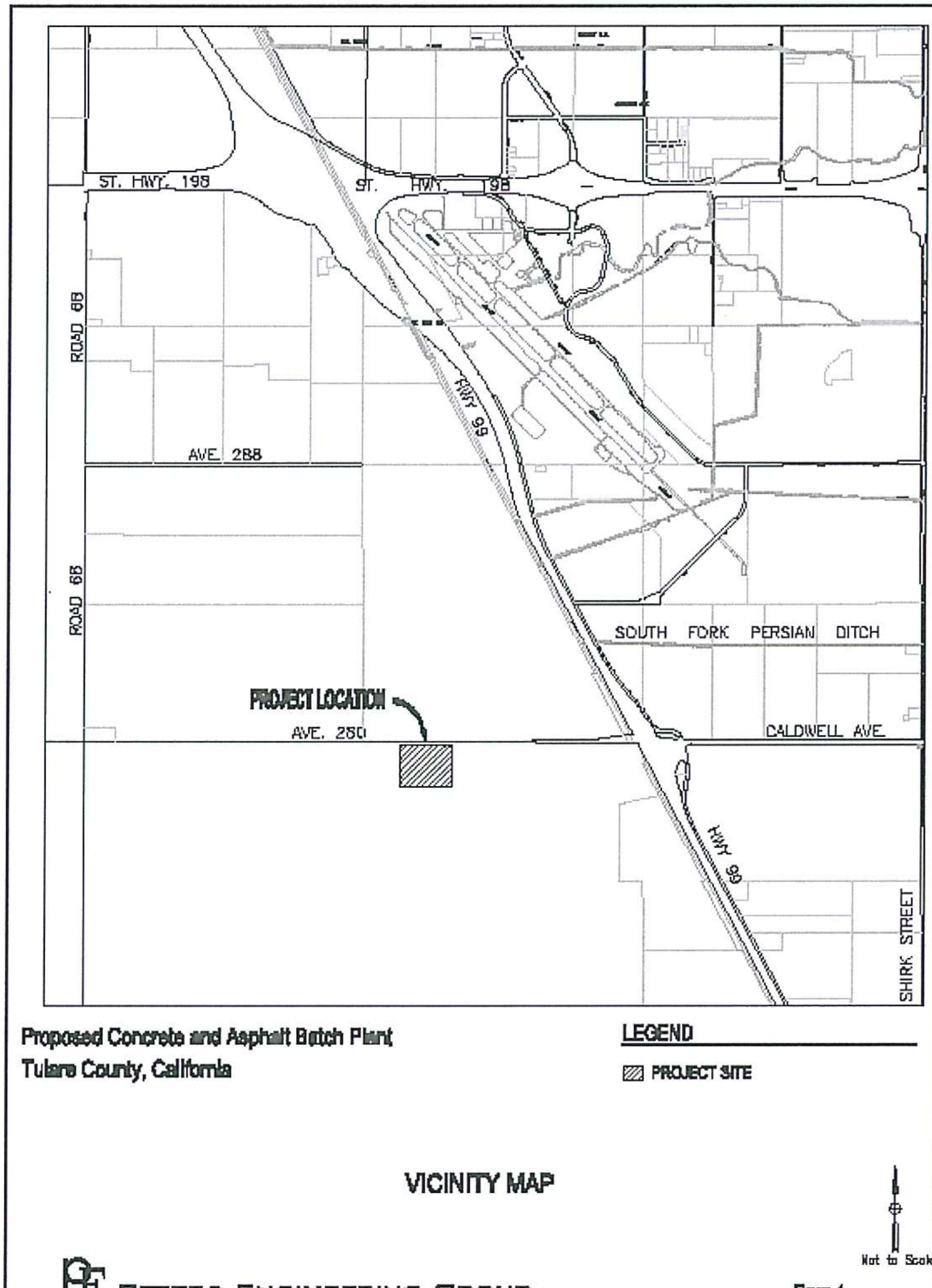
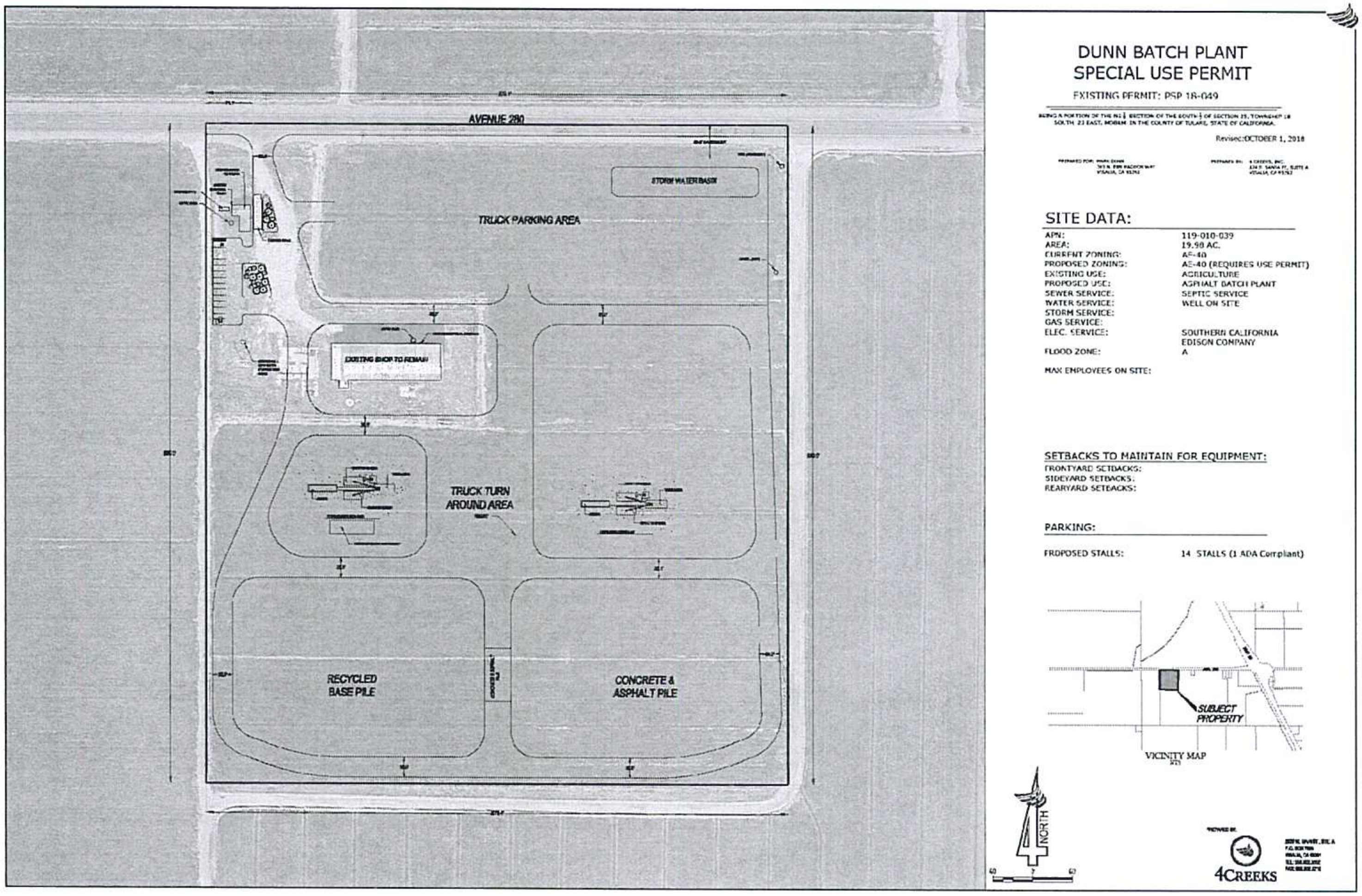

ST. HWY. 198
ST. HWY. 198
ROAD 68
ROAD 68
AVE. 288
HWY 99
SOUTH FORK PERSIAN DITCH
PROJECT LOCATION
AVE. 280
CALDWELL AVE.
HWY 99
SHIRK STREET
Proposed Concrete and Asphalt Batch Plant
Tulare County, California
LEGEND
PROJECT SITE
VICINITY MAP
Not to Scale
PETERS ENGINEERING GROUP
Figure 1

Figure 2 – Site Plan



PROJECT LOCATION AND SETTING

The proposed Project will be located at the south of Avenue 280 between State Route 99 and Road 76, about 1/2 mile west of State Route 99. The approximately 20-acre proposed Project site, is located entirely within an unincorporated area of Tulare County. Specifically, the proposed Project is located on APN: 119-010-039 with a physical address of 7763 Avenue 280, Visalia, California. The proposed Project is located with the Visalia Urban Area Boundary. State Route 99 is proximate to the site thereby providing regional access to the proposed Project site: State Route 198 is located approximately two miles north of the site and could be accessed via SR 99, (see Figure 1).

The site was previously used as a cotton gin facility. It contains a shop building, office building, septic system, well with water storage tank, scale, electrical meter, asphalt drive approach, and a six-foot high chain link fence around the site's perimeter. As noted earlier, the Applicant is proposing a trucking and construction yard with a concrete batch plant, hot asphalt plant, material stockpiles, and concrete and asphalt recycling operations. The site is flat with minimal slope and is predominantly unused agricultural land (the most recent previous crop grown on site was wheat, as such, the sit does not contain any orchards, vineyards, or other more permanent crop types). The site is zoned as AE-40 (Exclusive Agriculture-40 Acre minimum see Figure 2) and is proposed to remain as such pending approval of a Special Use Permit, which is the subject matter of this NOP and forthcoming EIR. No expansion of the existing footprint is being proposed. The site is surrounded by agricultural fields on all sides and is bordered by Avenue 280 (north), an existing dairy and dairy-related ag crops (west), dairy-related ag crops (south), and an existing dairy and dairy-related ag crops (east). State Route 198 is approximately 0.5 miles east and Road 76 is approximately one mile west.

DESCRIPTION OF PROPOSED FACILITIES

As indicated earlier, the proposed Project consists of a concrete batch plant, recycling of concrete and asphalt, and a hot mix asphalt batch plant. The concrete batch plant is expected to produce 100,000 cubic yards of concrete per year. Aggregate, cement, and fly ash will be delivered to the site and ready-mix concrete will be delivered from the site. The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors. The concrete and asphalt will be crushed into recycled base; it is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site. The hot-mix asphalt (HMA) batch plant is expected to produce 125,000 tons of HMA per year. Aggregate, oil, and propane will be delivered to the site and HMA will be delivered from the site.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will evaluate, among other things, the probable direct and cumulative environmental impacts associated with expansion and operation of the Dunn Asphalt and Concrete Batch Plant. Mitigation measures will be recommended, where feasible, to mitigate potentially significant impacts. The proposed Project will be evaluated on its own merits, resource specific facts, and determinations; therefore, a project specific environmental document will be prepared. The following issues are proposed for analysis in the EIR:

Aesthetics

The Project is located in a generally rural, agriculturally productive and dairying area. It is unlikely that its maximum height of 287' mean elevation would result in obstruction of views. Project site lighting would not likely have the potential to cause lighting and glare impacts as it is in a rural area that would operate only during daylight hours and would not include any evening operations. An existing on-site, single-story, 900 square foot building may be utilized as an office. On-site storage piles will not exceed 15 feet in height, the proposed silos will be the tallest structures on site at approximately 40-feet in height. The EIR will provide an assessment of Project impacts to visual resources, as well as lighting and glare impacts.

Agriculture and Forestry Resources

The site is zoned as AE-40 and is classified as "Prime Farmland" by the California Department of Conservation Farmland Mapping and Monitoring Program". However, the site has not been in agricultural production in more than eight years and the classification may longer accurately reflect the agricultural importance of the site. As such, the proposed Project's direct and indirect impacts on agricultural resources will be analyzed in the EIR.

Air Quality and Greenhouse Gas Emissions

The EIR will describe regional and local air quality in the vicinity of the proposed Project site and evaluate impacts to air quality associated with the construction, expansion, and continued operation of the Project. An air quality study will be prepared to establish baseline, project, and cumulative impacts. The proposed Project's estimated air emissions will be compared to emissions thresholds of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The EIR will describe existing air quality conditions within the San Joaquin Valley Air Basin and will evaluate the proposed Project's potential air quality impacts. Potential air quality emissions impacts include odor, dust, pathogens, and construction related activities; however, the Project has incorporated design features to reduce these potential impacts, including automated sprinklers and on-site water trucks for dust control and a volatile capture and recovery system which would reduce emissions resulting from the combustion process. The EIR will also include a discussion of greenhouse gas emissions and the proposed Project's contribution to potential cumulative impacts on global climate.

Biological Resources

Construction of industrial infrastructure may modify biotic habitats used by sensitive plant and wildlife species. As such, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of Tulare County. A biological report will be prepared to address issues related to: 1) sensitive biotic resources occurring on the project site; 2) the federal, state, and local laws regulating such resources; and 3) mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. The proposed Project's potential to affect biological resources will be analyzed in the EIR.

Cultural and Tribal Cultural Resources

There are no visibly identifiable or recognizable cultural resources within the proposed Project expansion areas. As investigation will be conducted to ensure that adverse impacts to significant or unique historical resources do not occur as a result of the proposed project. It is anticipated that the study would include:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

As such, this DEIR will include an analysis of the proposed Project's potential to affect cultural resources.

Geology/Soils and Mineral Resources

Construction and operation of the proposed Project facilities on the project site could result in impacts related to geotechnical hazards, including seismicity of the area, potential for liquefaction and subsidence, potential for soil erosion, soil stability characteristics, and shrink/swell potential of site soils, as applicable. According to the USDA Natural Resources Conservation Service Soil Resource Report for Western Tulare County, the site contains Akers-Akers, saline-sodic complex, 0-2% slopes; Tagus loam, 0-2% slopes; and Nord fine sand loan, o-2% slopes. All of the soils types are well drained soils with a Moderate Erosion Susceptibility Index (K Factor) zone. According to the Tulare County General Plan 2030 Update EIR, there are no known potential mineral resources. It is currently unknown whether the proposed Project site soils have the potential to contain paleontological resources. If such resources exist on the site, construction, expansion, and continued operational activities could result in potentially significant impacts. The EIR for the proposed Project will evaluate potential site-specific impacts related to geology, soils, mineral resources, and paleontological resources.

Greenhouse Gas Emissions

Implementation of the proposed Project would result in impacts resulting from project-related greenhouse gases. The EIR will include a discussion of greenhouse gas emissions and the proposed Project's contribution to potential cumulative impacts on global climate. The proposed Project's estimated greenhouse gas emissions will be evaluated for consistency with the Tulare County 2030 General Plan, the Tulare County Climate Action Plan, and the State's 2017 Scoping Plan.

Hazards and Hazardous Materials

There are no known hazards and hazardous materials located within the proposed Project site, nor is the proposed Project site located on a Cortese List site. The EIR will evaluate the potential for the proposed Project to result in, or be affected by, impacts associated with hazards and hazardous materials.

Hydrology/Water Quality

FEMA FIRM maps indicate that the proposed Project area is within of the 100-Year Flood Zone and is also located outside of a Dam Failure Inundation Area. Water is supplied through an existing on-site well for use in dust control (sprinklers and water truck) and a minor amount for the office facility. The EIR will describe the proposed Project's effect, both directly and cumulatively on the hydrology, water quality, and water supply resources. The EIR will analyze the proposed Project's effect on the hydrology, water quality, and water supply resources.

Land Use/Planning

The EIR will describe the proposed Project's potential effects on existing and planned land uses. The proposed Project lies within the jurisdiction of the County of Tulare and is within the Rural Valley Lands Plan Planning Area. The Tulare County General Plan 2030 Plan designates the site as being immediately outside the City of Visalia Urban Area Boundary and is zoned as AE-40 (Exclusive Agriculture-40 Acre minimum). The site is within the designated Airport Conical Zone for the Visalia Municipal Airport. The construction and operation is an allowed use per its land-use designations with an approved Special Use Permit; however, the EIR will provide a discussion of relevant local plans and policies because conflicts could potentially result in environmental impacts.

Noise

The EIR will describe the Project's existing operational noise levels in addition to noise levels associated with construction and increased operational levels and will compare these levels to applicable noise thresholds to determine whether the proposed Project would result in a significant noise impact. The EIR will also consider noise generated by existing surrounding land uses, such as the Visalia Municipal Airport, and will evaluate the potential effects on the proposed Project. A noise study will be prepared to establish baseline, project, and cumulative impacts.

Population/Housing

The EIR will evaluate the Project's effect on population and housing in the local area based on estimations of Project employment and distribution of the employees by place of residence.

Public Services

The EIR will evaluate the proposed Project's potential to create an adverse impact to schools, and will also evaluate effects on local police and fire services along with parks and regional recreational facilities.

Recreation

Although unlikely due to the nature of the proposed Project, the increase in use of parks and other recreational facilities near the vicinity of the Project will be analyzed in the EIR.

Transportation/Traffic

The EIR will evaluate the Project's impact on regional and local transportation facilities based on a transportation analysis that will assess both construction-related impacts (heavy truck trips and construction worker trips), as well as operational impacts (employee trips, incoming and outgoing materials heavy-duty truck transport, access, and parking). Site access will be provided via one main driveway connecting to the south side of Avenue 280 approximately 1,000 feet east of Road 76. The study locations were determined based on the anticipated Project traffic distribution, the size of the Project, and the existing conditions in the vicinity of the Project site. The following locations will be included in the study:

1. Avenue 280 / Road 68
2. Avenue 280 / SR 99 Southbound Ramps
3. Avenue 280 / Drive 85B / Drive 88
4. SR 99 Northbound Ramps / Drive 88.

The study time periods include the weekday a.m. and p.m. peak hours determined between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. The peak hours will be analyzed for the following conditions:

- Existing Conditions;
- Existing-Plus-Project Conditions; and
- Cumulative (Year 2040) Conditions With Project.

Generally-accepted traffic engineering principles and methods will be employed to estimate the amount of traffic expected to be generated by the Project, to analyze the existing traffic conditions, and to analyze the traffic conditions projected to occur in the future. The Tulare County General Plan 2030 Update DEIR considers LOS D as the minimum acceptable LOS standard during peak hours for major roadways and intersections. A traffic study will be prepared to establish baseline, project, and cumulative impacts for the proposed Project in consultation with the City of Visalia, County of Tulare, the Tulare County Association of Governments, and CalTrans. Similarly, the Draft EIR will examine alternative traffic distribution.

Tribal Cultural Resources

See earlier discussion at Cultural and Tribal Cultural Resources.

Utilities/Service Systems

The proposed Project will not require extension/connection to urban services such as potable water service, wastewater treatment, and stormwater drainage. However, the EIR will analyze drainage, water, wastewater, natural gas, and electrical systems and the proposed Project's impact on these systems. The EIR will also describe the existing solid waste facilities that serve the proposed site.

ENERGY

The EIR will include an analysis on the Project's potential to result in impacts on energy conservations and/or consumption.

GROWTH INDUCEMENT

The EIR will evaluate the proposed Project's potential for growth inducement resulting from expansion or extension of infrastructure improvements, as well as new demand for housing, and goods and services. The effect of primary and secondary increases in employment and economic activity will be discussed.

CUMULATIVE IMPACTS

The EIR will discuss the incremental contribution of the proposed Project to cumulative effects of other past, current, and planned and reasonably foreseeable Projects in the vicinity. The summary of projects method will be used where applicable. Also, to the extent feasible, the Cumulative Impacts section will quantify the degree of severity of any cumulative impact.

ALTERNATIVES EVALUATED IN THE EIR

In accordance with the CEQA Guidelines Section 15126.6, the EIR will describe a reasonable range of alternatives to the proposed Project that are capable of meeting most of the proposed Project's objectives, but would avoid or substantially lessen any of the significant effects of the proposed Project. The EIR will also identify any alternatives that were considered but rejected by the Lead Agency as infeasible and briefly explain the reasons why. The EIR will also provide an analysis of the No Project Alternative.

OPPORTUNITY FOR PUBLIC COMMENT

Interested individuals, groups, and agencies may provide to the County of Tulare Resource Management Agency, Planning Branch, written comments on topics to be addressed in the EIR for the proposed Project. Because of time limits mandated by state law, comments should be provided no later than ***5:00 p.m. February 18, 2019***. Agencies that will need to use the EIR when considering permits or other approvals for the proposed Project should provide the name of a staff contact person. Please send all comments to:

Hector Guerra, Chief Environmental Planner
Tulare County Resource Management Agency
Economic Development and Planning Branch
5961 South Mooney Boulevard
Visalia, CA 93277-9394
E-mail at: HGuerra@co.tulare.ca.us;
Phone: (559) 624-7121

APPENDIX G.3

SCOPING MEETING

Dunn Asphalt and Concrete Batch Plant (PSP 18-049)
Scoping Meeting - January 31, 2019 at 1:30 PM
SCH No. 2019011039

Name	Agency/Organization	Mailing Address	Phone Number	E-mail
no agencies/interested parties were in attendance;				
RMA staff in attendance were Hector Guerra, (Chief Env. Planner)				
and Jessica Willis (Planner IV)				

APPENDIX G.4

AGENCY COMMENT LETTERS RECEIVED

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Notice of Preparation

Tulare County
Resource Management Agency

JAN 24 2019

REC'D

January 18, 2019

To: Reviewing Agencies

Re: Dunn Asphalt and Concrete Batch Plant (PSP 18-049)
SCH# 2019011039

Attached for your review and comment is the Notice of Preparation (NOP) for the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Hector Guerra
Tulare County
5961 South Mooney Boulevard
Visalia, CA 93277-9394

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2019011039

Project Title: Dunn Asphalt and Concrete Batch Plant (PSP 18-049)

Lead Agency: County of Tulare Resource Management Agency — Contact: Hector Guerra, Chief Environmental Planner
Mailing Address: 5961 S. Mooney Blvd. — Phone: 559-624-7121
City: Visalia — Zip: 93277-9394 — County: Tulare County

Project Location: County: Tulare — City/Nearest Community: Visalia
Cross Streets: Avenue 280 and State Route 99 — Zip Code: 93277
Latitude/Longitude: 36 ° 17 ′ 52.80 ″ N / 119 ° 24 ′ 00.08 ″ W — Total Acres: 20.0
Assessor's Parcel No: 119-010-039 — Section: 8 — Township: 19 S — Range: 24E — Base: MDBM
Within 2 Miles: State Hwy: SR 99 — Waterways: Mill Creek
Airports: Visalia Municipal Airport — Railways: SPRR — Schools: Sycamore Valley Academy

Governor's Office of Planning & Research

Document Type:

JAN 18 2019

STATE CLEARINGHOUSE

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.)____ ☐ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other ____

Local Action Type:

☐ General Plan Update	☐ Specific Plan	☐ Rezone	☐ Annexation
☐ General Plan Amendment	☐ Master Plan	☐ Pre-zone	☐ Redevelopment
☐ General Plan Element	☐ Planned Unit Dev.	☒ Use Permit	☐ Coastal Permit
☐ Community Plan	☐ Site Plan	☐ Land Division (Sub.)	☐ Other ____

Development Type:

☐ Residential: Units____ Acres____
☐ Office: Sq. ft. ____ Acres____ Employees ____
☐ Commercial: Sq. ft.____ Acres____ Employees ____
☒ Industrial: Sq. ft. ____ Acres 20.0 Employees 15-20
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD____
☐ Transportation: Type____
☐ Mining: Mineral ____
☐ Power: Type ____ MW____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type____
☒ Other: Asphalt & Concrete Batch Plant

Project Issues Discussed in Document:

☒ Aesthetic/Visual	☐ Fiscal	☒ Recreation/Parks	☒ Vegetation
☒ Agricultural Land	☒ Flood Plain/Flooding	☒ Schools/Universities	☒ Water Quality
☒ Air Quality	☒ Forest Land/Fire Hazard	☒ Septic Systems	☒ Water Supply/Groundwater
☒ Archaeological/Historical	☒ Geologic/Seismic	☒ Sewer Capacity	☒ Wetland/Riparian
☒ Biological Resources	☒ Minerals	☒ Soil Erosion/Compaction/Grading	☒ Growth Inducing
☐ Coastal Zone	☒ Noise	☒ Solid/Waste	☒ Land Use
☒ Drainage/Absorption	☒ Population/Housing Balance	☒ Toxic/Hazardous	☒ Cumulative Effects
☒ Economic/Jobs	☒ Public Services/Facilities	☒ Traffic/Circulation	☒ Other: Tribal Cultural Res.

Present Land Use/Zoning/General Plan Designation:

Shop, Equipment Yard, and Farming / AE-40 (Extensive Agriculture – 40 Acre Minimum) / Agriculture

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Project Description:

See attached page.

Document Details Report
State Clearinghouse Data Base

SCH# 2019011039
Project Title Dunn Asphalt and Concrete Batch Plant (PSP 18-049)
Lead Agency Tulare County

Type **NOP** Notice of Preparation

Description The County of Tulare Resource Management Agency (RMA) will be preapring an Environmental Impact Report to evaluate the environmental effects associated with the development of an asphalt and concrete batch plant. The project is being proposed by Dunn's Equipment, Inc to produce up t 100,000 cubic yards of concrete per year of asphalt for retail/commercial sale on an approximately 20.0 acre site located south of Avenue 280 between Road 76 and State Route 99. The site is currently zoned as AE-40.

The concrete batch plant is expected to produce cubic yards of concrete per year. Aggregate, cement, and fly ash will be delivered to the site and ready-mix concrete will be delivered to the site and ready-mix concrete will be delivered from the site. The concrete and asphalt recycling operation will consist of accepting broken concrete and asphalt from contractors.The concrete and asphalt will be crushed into recycled base; it is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site. The hot-mix asphalt (HMA) aspahlt plant is expected to produce 125,000 tons of HMA per year. Aggregate, oil, propane will be delivered from the site. The project would generate approx. 280 passenger car equivalent (PCE) trips during the morning peak travel periods, and 110 PCE trips during the evening peak travel periods. Site access will be provided via one main driveway connecting to the south side of Avenue 280 approximately 1,000 feet east of Road 76.

Lead Agency Contact

Name Hector Guerra
Agency Tulare County
Phone 559-624-7121 **Fax**
email
Address 5961 South Mooney Boulevard
City Visalia **State** CA **Zip** 93277-9394

Project Location

County Tulare
City Visalia
Region
Cross Streets Ave 280 and SR 99
Lat / Long 36° 17' 52.80" N / 119° 24' 00.08" W
Parcel No. 119-010-039
Township 19S **Range** 24E **Section** 8 **Base** MDBM

Proximity to:

Highways SR 99
Airports Visalia Municipal Airport
Railways SPRR
Waterways Mill Creek
Schools Sycamore Valley Academy
Land Use Shop, equipment yard, and farming/ AE-40 (Extensive Agriculture - 40 ACre minimum)/ Agriculture

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Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Biological Resources; Archaeologic-Historic; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Solid Waste; Traffic/Circulation; Tribal Cultural Resources; Wetland/Riparian; Water Supply; Water Quality; Vegetation

Note: Blanks in data fields result from insufficient information provided by lead agency.

Reviewing Agencies	Resources Agency; Department of Conservation; Central Valley Flood Protection Board; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 4; Native American Heritage Commission; Public Utilities Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 6; Air Resources Board, Major Industrial Projects; Resources, Recycling and Recovery; State Water Resources Control Board, Division of Drinking Water; State Water Resources Control Board, Division of Drinking Water, District 24; Regional Water Quality Control Bd., Region 5 (Fresno)

Date Received 01/18/2019 ***Start of Review*** 01/18/2019 ***End of Review*** 02/19/2019

NOP Distribution List

County: Tulare CR

SCH# 2019011039

esources Agency

Resources Agency
Nadell Gayou

- [ ] **Dept. of Boating & Waterways**
Denise Peterson
- [ ] **California Coastal Commission**
Allyson Hitt
- [ ] **Colorado River Board**
Elsa Contreras
- [x] **Dept. of Conservation**
Crina Chan
- [ ] **Cal Fire**
Dan Foster
- [x] **Central Valley Flood Protection Board**
James Herota
- [x] **Office of Historic Preservation**
Ron Parsons

Dept of Parks & Recreation
Environmental Stewardship Section

- [ ] **S.F. Bay Conservation & Dev't. Comm.**
Steve Goldbeck
- [x] **Dept. of Water Resources**
Resources Agency
Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
Scott Flint
Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
Curt Babcock
- [ ] **Fish & Wildlife Region 1E**
Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
Jeff Drongesen
- [ ] **Fish & Wildlife Region 3**
Craig Weightman
- [x] **Fish & Wildlife Region 4**
Julie Vance
- [ ] **Fish & Wildlife Region 5**
Leslie Newton-Reed
Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
Tiffany Ellis
Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
Heidi Calvert
Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
William Paznokas
Marine Region

Other Departments

- [ ] **California Department of Education**
Lesley Taylor
- [ ] **OES (Office of Emergency Services)**
Monique Wilber
- [ ] **Food & Agriculture**
Sandra Schubert
Dept. of Food and Agriculture
- [ ] **Dept. of General Services**
Cathy Buck
Environmental Services Section
- [ ] **Housing & Comm. Dev.**
CEQA Coordinator
Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
Erik Vink
- [ ] **Delta Stewardship Council**
Anthony Navasero
- [ ] **California Energy Commission**
Eric Knight
- [x] **Native American Heritage Comm.**
Debbie Treadway
- [x] **Public Utilities Commission**
Supervisor
- [ ] **Santa Monica Bay Restoration**
Guangyu Wang
- [ ] **State Lands Commission**
Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Cal State Transportation Agency CalSTA

- [x] **Caltrans - Division of Aeronautics**
Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
Christian Bushong
- [x] **California Highway Patrol**
Suzann Ikeuchi
Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1**
Rex Jackman
- [ ] **Caltrans, District 2**
Marcelino Gonzalez
- [ ] **Caltrans, District 3**
Susan Zanchi
- [ ] **Caltrans, District 4**
Patricia Maurice
- [ ] **Caltrans, District 5**
Larry Newland
- [x] **Caltrans, District 6**
Michael Navarro
- [ ] **Caltrans, District 7**
Dianna Watson
- [ ] **Caltrans, District 8**
Mark Roberts
- [ ] **Caltrans, District 9**
Gayle Rosander
- [ ] **Caltrans, District 10**
Tom Dumas
- [ ] **Caltrans, District 11**
Jacob Armstrong
- [ ] **Caltrans, District 12**
Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight**
Jack Wursten
  - [ ] **Transportation Projects**
  Nesamani Kalandiyur
  - [x] **Industrial/Energy Projects**
  Mike Tollstrup
- [x] **California Department of Resources, Recycling & Recovery**
Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance
- [x] **State Water Resources Control Board**
Cindy Forbes – Asst Deputy
Division of Drinking Water
- [x] **State Water Resources Control Board**
Div. Drinking Water # 24
- [ ] **State Water Resources Control Board**
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality
- [ ] **State Water Resouces Control Board**
Phil Crader
Division of Water Rights
- [ ] **Dept. of Toxic Substances Control Reg. #** ______
CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
Cathleen Hudson
North Coast Region (1)
- [ ] **RWQCB 2**
Environmental Document Coordinator
San Francisco Bay Region (2)
- [ ] **RWQCB 3**
Central Coast Region (3)
- [ ] **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)
- [ ] **RWQCB 5S**
Central Valley Region (5)
  - [x] **RWQCB 5F**
  Central Valley Region (5)
  Fresno Branch Office
  - [ ] **RWQCB 5R**
  Central Valley Region (5)
  Redding Branch Office
- [ ] **RWQCB 6**
Lahontan Region (6)
  - [ ] **RWQCB 6V**
  Lahontan Region (6)
  Victorville Branch Office
- [ ] **RWQCB 7**
Colorado River Basin Region (7)
- [ ] **RWQCB 8**
Santa Ana Region (8)
- [ ] **RWQCB 9**
San Diego Region (9)
- [ ] **Other** ______
- [ ] ______
Conservancy

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

January 25, 2019

Hector Guerra
Tulare County
5961 South Mooney Boulevard
Visalia, CA 93277-9394

RE: SCH# 2019011039 Dunn Asphalt and Concrete Batch Plant (PSP 18-049), Tulare County

Dear Mr. Guerra:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
       i. Planning and construction to avoid the resources and protect the cultural and natural context.
       ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
       i. Protecting the cultural character and integrity of the resource.
       ii. Protecting the traditional use of the resource.
       iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
   a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
   b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
   a. If part or all of the APE has been previously surveyed for cultural resources.
   b. If any known cultural resources have already been recorded on or adjacent to the APE.
   c. If the probability is low, moderate, or high that cultural resources are located in the APE.
   d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
   a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
   b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Sharaya.Souza@nahc.ca.gov.

Sincerely,

Nancy Gonzalez

for

Sharaya Souza
Staff Services Analyst

cc: State Clearinghouse

State of California
Native American Heritage Commission
1550 Harbor Blvd., Ste. 100
West Sacramento, CA 95691

Tulare County
Resource Management Agency

JAN 31 2019

REC'D

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January 29, 2019

Tulare County
Resource Management Agency

FEB 04 2019

REC'D

VIA EMAIL: HGUERRA@CO.TULARE.CA.US
Mr. Hector Guerra
Tulare County
5961 South Mooney Boulevard
Visalia, CA 93277-9394

Dear Mr. Guerra:

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE DUNN ASPHALT AND CONCRETE BATCH PLANT, SCH# 2019011039

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation submitted by Tulare County (County) for the Dunn Asphalt and Concrete Batch Plant (project). The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description

The proposed project would produce up to 100,000 cubic yards of concrete per year for retail/commercial sale on an approximately 20-acre site located south of Avenue 280 between Road 76 and State Route 99. The recycling operation would accept concrete and asphalt from contractors, and would crushed those materials into recycled base. It is anticipated that 30,000 tons of recycled base will be produced per year and delivered from the site. The hot-mix asphalt (HMA) batch plant is expected to produce 125,000 tons of HMA per year. The project site is: zoned agriculture, and is designated as Prime Farmland according to the most recent Important Farmland Map produced by the Department of Conservation's Farmland Mapping and Monitoring Program[1].

Department Comments

The conversion of agricultural land represents a permanent reduction and significant impact to the State's agricultural land resources. Under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project.[2] All mitigation measures that are potentially feasible

[1] Department of Conservation, Farmland Mapping and Monitoring Program, California Important Farmland Finder, 2016, https://maps.conservation.ca.gov/DLRP/CIFF/
[2] California Environmental Quality Act Statute and Guidelines, Association of Environmental Professionals, 2017, Section 21002, page 2.

should be included in the Draft Environmental Impact Report (DEIR). A measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

The Department advises the use of permanent agricultural conservation easements on land of at least equal quality and size as mitigation for the loss of agricultural land. Conservation easements will protect remaining land resources and mitigate the project impacts in accordance with CEQA Guideline § 15370. The Department highlights agricultural conservation easements because of their acceptance and use by lead agencies as an appropriate mitigation measure under CEQA. Agricultural conservation easements are an available mitigation tool and should always be considered; however, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered.

Conclusion

The Department recommends the following discussion under the Agricultural Resources section of the DEIR:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measure for all impacted agricultural lands within the proposed project area.

Thank you for giving us the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the Dunn Asphalt and Concrete Batch Plant Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Environmental Planner at (916) 324-7347 or via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber
Conservation Program Support Supervisor

TULARE COUNTY
HEALTH & HUMAN SERVICES AGENCY

Jason T. Britt, M.S.
Agency Director

Nilsa Gonzalez • Public Health Branch Deputy Director • Environmental Health Director

January 31, 2019

HECTOR GUERRA
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD
VISALIA CA 93277

RE: NOP of DRAFT EIR; DUNN ASPHALT & CONCRETE BATCH PLANT

Dear Mr. Guerra:

This office has reviewed the above referenced matter. Based upon our review, we offer the following comments for this project:

1. If the site will ever handle or store quantities of hazardous materials in excess of 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a compressed gas, or **any** amount of a hazardous waste, then the site(s) will be required to submit a Hazardous Materials Business Plan to TCEHSD. The facility operator(s) shall immediately contact TCEHSD at (559) 624-7400 if the site(s) ever meet these threshold quantities.
2. The site may require a Solid Waste Facility Permit with TCEHSD. Applicant shall contact Keith Jahnke, at (559) 624-7400, to determine submittal requirements.

Sincerely,

Ted Martin
Environmental Health Specialist
Environmental Health Services Division

Cc: J.Gaona-EH, K.Jahnke-EH

DEPARTMENT OF TRANSPORTATION
DISTRICT 6
1352 WEST OLIVE AVENUE
P.O. BOX 12616
FRESNO, CA 93778-2616
PHONE (559) 488-7396
FAX (559) 488-4088
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

February 15, 2019

06-TUL-99-36.85
2135-IGR/CEQA
NOP
DUNN ASPHALT/CONCRETE BATCH PLANT
SCH # 2019011039

Mr. Hector Guerra
Chief Environmental Planner
Tulare County Resource Management Agency
5961 S Mooney Blvd.
Visalia, CA 93277

Dear Mr. Guerra:

Thank you for the opportunity to review the Notice of Preparation (NOP) for a Draft Environmental Impact Report (DEIR) to allow a proposed Asphalt & Concrete Batch Plant (Project). The Project consists of a concrete batch plant, concrete and asphalt recycling, and a hot-mix asphalt (HMA) batch operation. Aggregate, cement, and fly ash will be delivered to the site to produce ready-mix concrete. The concrete batch plant is expected to produce 100,000 cubic yards of ready-mix concrete per year. The recycled concrete and asphalt operation will accept broken concrete and asphalt from contractors to be crushed into a recycled base. The recycling operation is expected to produce 30,000 tons of recycled base per year. The HMA batch facility will accept delivery of aggregate, oil, and propane and is expected to produce 125,000 tons of HMA per year. The 20-acre project site is located at 7763 Avenue 280, on the southeast corner of the Caldwell Avenue (Avenue 280) and Road 76 intersection; approximately ½ mile west of the State Route (SR) 99/Caldwell Avenue interchange.

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. Caltrans provides the *following comments* consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. The NOP indicates that the DEIR will evaluate the Project's impact on regional and local transportation facilities based on a Transportation Impact Analysis (TIA) that will address both construction and operational related impacts.

2. The DEIR should identify the Project's fair share percentage and related contribution toward both interim and permanent improvements for the SR 99/Caldwell Avenue interchange improvement project.

3. Please note that Caltrans previously reviewed and commented on a draft Traffic Impact Study (TIS) prepared by a consultant (4Creeks) for the proposed Project, dated November 2, 2018 which are still valid and provided below:

   a) Site access will be provided via one main driveway connecting to Avenue 280 approximately 1,000 feet east of Road 76.

b) The TIS estimates the project would generate approximately 280 passenger car equivalent (PCE) trips during the morning peak travel periods, and 110 PCE trips during the evening peak travel periods.

c) The traffic study anticipates that approximately 70% of the trips generated by the Project would directly impact SR 99 and an additional 20% would further impact the two bridge structures crossing over SR 99.

d) As a point of information, Caltrans is working with the County of Tulare and Tulare County Association of Governments (TCAG) on the SR 99/Caldwell Avenue interchange improvement project which is planned to be completed by 2024. Caltrans has performed the Intersection Control Evaluation (ICE) analysis for the interchange improvement project and has established that roundabouts are the preferred intersection control types at the ramp intersections.

e) The TIS indicates that the SR 99/Caldwell Avenue interchange intersection at the southbound ramps currently operate satisfactorily during the morning and evening peak travel periods (LOS C).

f) However, the TIS indicates that with the addition of Project trips, the southbound ramp intersection would begin to operate unsatisfactorily during the morning peak travel period (LOS E). However, it is assumed with completion the SR 99/Caldwell Avenue interchange improvement project, that the resulting southbound ramps intersection would operate satisfactorily in the future conditions.

g) Given the timing of the interchange improvement project, it does not seem practical to explore interim improvements to the southbound ramp intersection. However, if the timing of the interchange improvement project dramatically changes, then interim improvements should be re-evaluated.

h) The TIS indicates that the SR 99/Caldwell Avenue interchange northbound ramps intersections currently operate satisfactorily during the morning and evening peak travel periods (LOS B) and would continue to operate satisfactorily with the addition of the project traffic.

i) Please note: The northbound ramp intersection is indicated as having all-way STOP signs at the four approaches to the intersection; however, the street view mapping shows that the eastbound and westbound traffic on Caldwell (Avenue 280) do not have STOP signs. If the intersection was analyzed as an all-way stop, rather than a 2-way stop, then the resulting LOS might be incorrect. Please check and verify.

j) To mitigate its share of the impacts to the interchange, the Project should be responsible for an equitable share of the interchange project.

If you have any other questions, please call me at (559) 488-7396.

Sincerely,

DAVID DEEL
Associate Transportation Planner
Transportation Planning – North

February 20, 2019

Tulare County
Resource Management Agency

FEB 25 2019

REC'D

Hector Guerra
County of Tulare
Tulare County Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

Project: Notice of Preparation (NOP) of a Draft Environmental Impact report (EIR) for Dunn Asphalt and Concrete Batch Plant (PSP 18-049)

District CEQA Reference No: 20190080

Dear Mr. Guerra:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) for the Dunn Asphalt and Concrete Batch Plant (PSP 18-049) project. The proposed project consists of developing an asphalt and concrete batch plant to produce up to 100,000 cubic yards of concrete per year of asphalt for retail/commercial sale on an approximately 20.0 acre site (Project), located at 7763 Avenue 280, Visalia, CA 93277. The District offers the following comments:

Emissions Analysis

1) At the federal level for the National Ambient Air Quality Standards (NAAQS), the District is currently designated as extreme nonattainment for the 8-hour ozone standards; nonattainment for the PM2.5 standards; and attainment for the 1-Hour ozone, PM10 and CO standards. At the state level, the District is currently designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 California Ambient Air Quality Standards (CAAQS). The District recommends that the Air Quality section of the Environmental Impact Report (EIR) include a discussion of the following impacts:

   a) **Criteria Pollutants:** Project related criteria pollutant emissions should be identified and quantified. The discussion should include existing and post-project emissions.

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region	Central Region (Main Office)	Southern Region
4800 Enterprise Way	1990 E. Gettysburg Avenue	34946 Flyover Court
Modesto, CA 95356-8718	Fresno, CA 93726-0244	Bakersfield, CA 93308-9725
Tel: (209) 557-6400 FAX: (209) 557-6475	Tel: (559) 230-6000 FAX: (559) 230-6061	Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

i) Construction Emissions: Construction emissions are short-term emissions and should be evaluated separately from operational emissions. For reference, the District's annual criteria thresholds of significance for construction are: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

- *Recommended Mitigation Measure if needed:* To reduce impacts from construction related exhaust emissions, the District recommends feasible mitigation for the project to utilize off-road construction fleets that can achieve fleet average emissions equal to or cleaner than the Tier III emission standards, as set forth in §2423 of Title 13 of the California Code of Regulations, and Part 89 of Title 40 Code of Federal Regulations. This can be achieved through any combination of uncontrolled engines and engines complying with Tier III and above engine standards.

ii) Operational Emissions: Permitted (stationary sources) and non-permitted (mobile sources) sources should be analyzed separately. For reference, the annual criteria thresholds of significance for operation of permitted and non-permitted sources each are: 100 tons per year of carbon monoxide (CO), 10 tons per year of oxides of nitrogen (NOx), 10 tons per year of reactive organic gases (ROG), 27 tons per year of oxides of sulfur (SOx), 15 tons per year of particulate matter of 10 microns or less in size (PM10), or 15 tons per year of particulate matter of 2.5 microns or less in size (PM2.5).

- *Recommended Mitigation Measure if needed:* Project related impacts on air quality can be reduced through incorporation of design elements, for example, that increase energy efficiency, reduce vehicle miles traveled, and reduce construction exhaust related emissions.

iii) Recommended Model: Project related criteria pollutant emissions from construction and operation non-permitted (limited to equipment not subject to District permits) should be identified and quantified. Emissions analysis should be performed using CalEEMod (**Cal**ifornia **E**mission **E**stimator **Mod**el), which uses the most recent approved version of relevant Air Resources Board (ARB) emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

b) **Nuisance Odors:** The Project should be evaluated to determine the likelihood that the Project would result in nuisance odors. Nuisance orders are subjective, thus the District has not established thresholds of significance for nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration of Project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors.

c) **Health Risk Screening/Assessment:** A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) (https://www.arb.ca.gov/toxics/healthval/healthval.htm) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. Industry specific TACs generated must also be identified and quantified.

The District recommends the Project be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using CAPCOA's updated methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed. The prioritization calculator can be found at: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for projects that result in a prioritization score of 10 or greater. It is recommended that the Project proponent contact the District to review the proposed modeling protocol. The Project would be considered to have a significant health risk if the HRA demonstrates that the Project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices.

Please provide the following information electronically to the District for review:

- HRA AERMOD model files
- HARP2 files

- Summary of emissions source locations, emissions rates, and emission factor calculations and methodology.

More information on toxic emission factors, prioritizations and HRAs can be obtained by:

- E-Mailing inquiries to: hramodeler@valleyair.org; or
- The District can be contacted at (559) 230-6000 for assistance; or
- Visiting the Districts website (Modeling Guidance) at http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm

d) **Ambient Air Quality Analysis:** An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. The District recommends that an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both Project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis. Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website www.valleyair.org/ceqa.

2) In addition to the discussions on potential impacts identified above, if preliminary review indicates that an EIR should be prepared, the District recommends the EIR also include the following discussions:

a) A discussion of the methodology, model assumptions, inputs and results used in characterizing the Project's impact on air quality. To comply with CEQA requirements for full disclosure, the District recommends that the modeling outputs be provided as appendices to the EIR. The District further recommends that the District be provided with an electronic copy of all input and output files for all modeling.

b) A discussion of the components and phases of the Project and the associated emission projections, including ongoing emissions from each previous phase.

c) A discussion of Project design elements and mitigation measures, including characterization of the effectiveness of each mitigation measure incorporated into the Project.

d) A discussion of whether the Project would result in a cumulatively considerable net increase of any criteria pollutant or precursor for which the San Joaquin Valley Air Basin is in non-attainment. More information on the District's attainment status can be found online by visiting the District's website at: http://valleyair.org/aqinfo/attainment.htm.

District Rules and Regulations

3) The proposed Project may be subject to District rules and regulations, including: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

4) This Project will be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and will require District permits. Prior to construction, the Project proponent should submit to the District an application for an Authority to Construct (ATC). For further information or assistance, the project proponent may contact the District's Small Business Assistance (SBA) Office at (661) 392-5665.

5) Per District Rule 9510 (Indirect Source Review) section 4.4.3, a development project on a facility whose primary functions are subject to District Rule 2201 or District Rule 2010 are exempt from the requirements of the rule. The District has reviewed the information provided and has determined that the primary functions of this Project are subject to District Rule 2201 (New and Modified Stationary Source Review Rule) or District Rule 2010 (Permits Required). As a result, District 9510 requirements and related fees do not apply to the Project referenced above.

   Therefore, you are required to obtain a District Authority to Construct prior to installation of equipment that controls or may emit air contaminants, including but not limited to emergency internal combustion engines, boilers, and baghouses. For more information please visit http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm or contact the District's Small Business Assistance.

6) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (661) 392-5665. Current District rules can be found online at the District's website at: www.valleyair.org/rules/1ruleslist.htm.

The District recommends that a copy of the District's comments be provided to the Project proponent. If you have any questions or require further information, please call Michael Corder at (559) 230-5818.

Sincerely,

Arnaud Marjollet
Director of Permit Services

for Brian Clements
Program Manager

AM: mc