BAKERSFIELD
THE SOUND OF *Something Better*

PLANNING COMMISSION AGENDA
MEETING OF JUNE 18, 2020
Council Chambers, City Hall South, 1501 Truxtun Avenue
Regular Meeting 5:30 P.M.

www.bakersfieldcity.us

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1. ROLL CALL

LARRY KOMAN, CHAIR
OSCAR L. RUDNICK, VICE-CHAIR
BOB BELL
MICHAEL BOWERS
DANIEL CATER
BARBARA LOMAS
PATRICK WADE

SPECIAL NOTICE: Public Participation and Accessibility
JUNE 18, 2020 Bakersfield Planning Commission Meeting

On March 18, 2020, Governor Gavin Newsom issued Executive Order N-29-20, which includes a waiver of Brown Act provisions requiring physical presence of the Commission or the public in light of the COVID-19 pandemic. Based on guidance from the California Governor's Office and Department of Public Health, as well as the County Health Officer, in order to minimize the potential spread of the COVID-19 virus, the City of Bakersfield hereby provides notice that as a result of the declared federal, state, and local health emergencies, and in light of the Governor's order, the following adjustments have been made:

1. The meeting scheduled for **June 18, 2020, at 5:30 p.m.** will have limited public access.
2. Consistent with the Executive Order, Commissioners may elect to attend the meeting telephonically and to participate in the meeting to the same extent as if they were physically present.
3. As an alternative to attending the meeting, the public may participate in the meeting and address the Planning Commission as follows:
   View a live video stream of the meeting at https://bakersfield.novusagenda.com/AgendaPublic/ or, on your local government channel (KGOV 2)

- If you wish to comment on a specific agenda item, submit your comment via email to the Planning Department at DEVPln@bakersfieldcity.us **no later than 1:00 p.m., June 18, 2020**. Please clearly indicate which agenda item number your

comment pertains to. If your comment meets the foregoing criteria, it will be entered into the record during the meeting.

- If you wish to make a general public comment not related to a specific agenda item, submit your comment via email to Planning Department at DEVPln@bakersfieldcity.us **no later than 1:00 p.m., June 18, 2020**. If your comment meets the foregoing criteria, it will be entered into the record during the meeting.
- You may comment by calling **(661) 326-3043** and leaving a voicemail no later than **4:00 p.m., June 17, 2020**. Your message must clearly indicate whether your comment relates to a particular agenda item, or is a general public comment. If your comment meets the foregoing criteria, it will be transcribed as accurately as possible and then entered into the record during the meeting.

2. PLEDGE OF ALLEGIANCE

3. PUBLIC STATEMENTS

4. CONSENT CALENDAR NON-PUBLIC HEARING

a. Approval of minutes for the Planning Commission Special Meeting of June 11, 2020.

Staff recommends approval.

Ward 4

b. **Planning Director's Report - Planned Development Review No. 20-0113:** Paul Dhanens Architect, Inc. is requesting to modify Planned Development Review (PDR No. 98-0462) to enclose a patio at an existing restaurant in a PCD (Planned Commercial Development Zone) district located at 8450 Granite Falls Drive. Notice of Exemption on file.

Staff recommends approval.

5. CONSENT CALENDAR PUBLIC HEARINGS

Ward 5

a. **Vesting Tentative Tract Map 7334 (Phased):** McIntosh and Associates is proposing to subdivide 20.07 acres into 66 multi-family residential lots in an R-2 (Limited Multi-Family Dwelling) zone located at the northeast corner of Panama Lane and South Allen Road. Mitigated Negative Declaration on file.

Staff recommends to continue this item to the July 16, 2020 meeting.

Ward 7

b. **General Plan Amendment/Zone Change No. 19-0292.** Lane Engineers, Inc. requests a General Plan Amendment/Zone Change on approximately 20.55 acres located at the northeast corner of the Taft Highway and South H Street consisting of: (1) an amendment to the Land Use Element designation from GC (General Commercial) to LI (Light Industrial), or a more restrictive designation; and (2) a change in zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing), or a more restrictive classification. Mitigated Negative Declaration on file.

Staff recommends approval.

Ward(s) 1, 2, 3, 4, 5, 6, 7

c. Text Amendments to Title 17 of the Bakersfield Municipal Code by amending Section 17.61.020 related to approved landscape plan requirements. Notice of Exemption on file.

Adopt Resolution approving ordinance amendments and recommend same to the City Council.

Ward(s) 1, 2, 3, 4, 5, 6, 7

d. Text Amendments to Title 17 of the Bakersfield Municipal Code by adding Sections 17.10.025, 17.14.025, and 17.16.025; and amending Sections 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, and 17.30.020, related to a Determination of Uses not listed in the Zoning Ordinance. Notice of Exemption on file.

Adopt Resolution approving ordinance amendments and recommend same to the City Council.

6. PUBLIC HEARINGS

7. WORKSHOPS

a. Workshop regarding General Plan.

Receive and file.

8. COMMUNICATIONS

9. COMMISSION COMMENTS

10. ADJOURNMENT

Paul Johnson
Planning Director

BAKERSFIELD
THE SOUND OF Something Better

COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020 **ITEM NUMBER:** 1.()

TO:

FROM:

PLANNER:

DATE:

WARD:

SUBJECT:
LARRY KOMAN, CHAIR
OSCAR L. RUDNICK, VICE-CHAIR
BOB BELL
MICHAEL BOWERS
DANIEL CATER
BARBARA LOMAS
PATRICK WADE

SPECIAL NOTICE: Public Participation and Accessibility
JUNE 18, 2020 Bakersfield Planning Commission Meeting

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APPLICANT:

OWNER:

LOCATION:

STAFF RECOMMENDATION:

COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020 **ITEM NUMBER:** 4.(a.)

TO:

FROM:

PLANNER:

DATE:

WARD:

SUBJECT: Approval of minutes for the Planning Commission Special Meeting of June 11, 2020.

APPLICANT:

OWNER:

LOCATION:

STAFF RECOMMENDATION:
Staff recommends approval.

ATTACHMENTS:

	Description	Type
🗋	Minutes for June 11, 2020 Special Meeting	Cover Memo

PLANNING COMMISSION MINUTES

Special Meeting of June 11, 2020 – 12:00 p.m.
Council Chambers, City Hall, 1501 Truxtun Avenue

ACTION TAKEN

1. ROLL CALL

Present: Chair Koman, Bell, Bowers, Cater, Rudnick

Absent: Commissioners Lomas, Wade

Staff Present: Viridiana Gallardo-King Deputy City Attorney; Paul Johnson, DS Planning Director; Jennie Eng, DS Principal Planner; Oscar Fuentes, Building Civil Engineer III, Dana Cornelius, Secretary.

2. PLEDGE OF ALLEGIANCE

3. PUBLIC STATEMENTS

Daniella Gutierrez (via email)

4. CONSENT CALENDAR NON-PUBLIC HEARING

a. Approval of minutes for the Regular Planning Commission meeting of May 7, 2020.

b. **City of Bakersfield Capital Improvement Program for Fiscal Year 2020-2021:** Resolution finding the Capital Improvement Program (CIP) for Fiscal Year 2020-2021 is consistent with the *Bakersfield Metropolitan General Plan*. The CIP sets forth projects that will be constructed to maintain the City's existing streets, sewers, parks, office facilities, etc. and build new public facilities such as highway improvements, parks, fire stations, police stations, etc.

RES NO 24-20

Motion by Commissioner Cater, seconded by Commissioner Bowers, to approve Consent Calendar Non-Public Hearing Items 4.a. and 4.b. Motion approved.

APPROVED

LOMAS, WADE ABSENT

		ACTION TAKEN
5.	**CONSENT CALENDAR PUBLIC HEARINGS**	
	a. Extension of Time for Vesting Tentative Tract Map 7296 (Phased): QK Inc., representing Pacific Crown Holdings, Inc., requests an extension of time for Vesting Tentative Tract 7296 consisting of 87 single family residential lots with a drilling site on 20.10 acres in an R-1(One-Family Dwelling) and R-2 (Limited Multiple Family Dwelling) zone, located on the south side of Olive Drive east of Santa Fe Way in northwest Bakersfield. Notice of Exemption on file.	**RES NO 25-20**
	b. Extension of Time for Vesting Tentative Tract Map 7317 (Phased): Porter & Associates, representing Bolthouse Properties LLC, requests an extension of time for Vesting Tentative Tract 7317 consisting of 357 lots, 2 retention basins, 1 water well lot, and 1 water tank site lot on 125.55 acres, zoned R-1 for single family residential development located at the southwest corner of Stockdale Highway and West Beltway Alignment. Notice of Exemption on file.	**RES NO 26-20**
	c. Tentative Parcel Map 12334: DPSI, representing Vista Montaire, LLC (property owner), is proposing to subdivide 596 acres into 2 residential parcels in an R-1(One-Family Dwelling), and R-1/HD (One-Family Dwelling/Hillside Development) zone located on the northeast corner of Paladino Drive and Masterson Street in northeast Bakersfield. A Negative Declaration on file. *Staff recommends this item be continued to the August 6, 2020 regular meeting.*	***Continued to August 6, 2020***
	Motion by Commissioner Bell, seconded by Commissioner Bowers, to approve Agenda Items 5.a. and 5.b, and continue Agenda Item 5.c. to August 6, 2020. Motion approved with Commissioner Cater abstaining from Agenda Item 5.b.	**APPROVED** **CATER ABSTAINED ON ITEM 5.b.** **LOMAS, WADE ABSENT**
6.	**PUBLIC HEARINGS**	
	None	

ACTION TAKEN

7. COMMUNICATIONS

Planning Director Paul Johnson stated the next Planning Commission meeting would be Thursday, June 18, 2020 at 5:30 p.m.

8. COMMISSION COMMENTS

None

9. ADJOURNMENT

There being no further business, Chair Koman adjourned the meeting at 12:12 p.m.

Dana Cornelius
Recording Secretary

Paul Johnson
Planning Director

COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020

ITEM NUMBER: Consent Calendar Non-Public Hearings4.(b.)

TO: Planning Commission

FROM: Paul Johnson, Planning Director

PLANNER: Kassandra Gale, Principal Planner

DATE:

WARD: Ward 4

SUBJECT:
Planning Director's Report - Planned Development Review No. 20-0113: Paul Dhanens Architect, Inc. is requesting to modify Planned Development Review (PDR No. 98-0462) to enclose a patio at an existing restaurant in a PCD (Planned Commercial Development Zone) district located at 8450 Granite Falls Drive. Notice of Exemption on file.

APPLICANT: Paul Dhanen's Architect, Inc.

OWNER: Jose Eduardo Salmeron

LOCATION: 8450 Granite Falls Drive

STAFF RECOMMENDATION:
Staff recommends approval.

ATTACHMENTS:

	Description	Type
🗋	Staff Report	Staff Report
🗋	Draft Resolution	Resolution

BAKERSFIELD
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CITY OF BAKERSFIELD
PLANNING DEPARTMENT
STAFF REPORT

TO: Chair Koman and Members of the Planning Commission AGENDA ITEM 4.b.

FROM: Paul Johnson, Planning Director APPROVED PJ

DATE: June 18, 2020

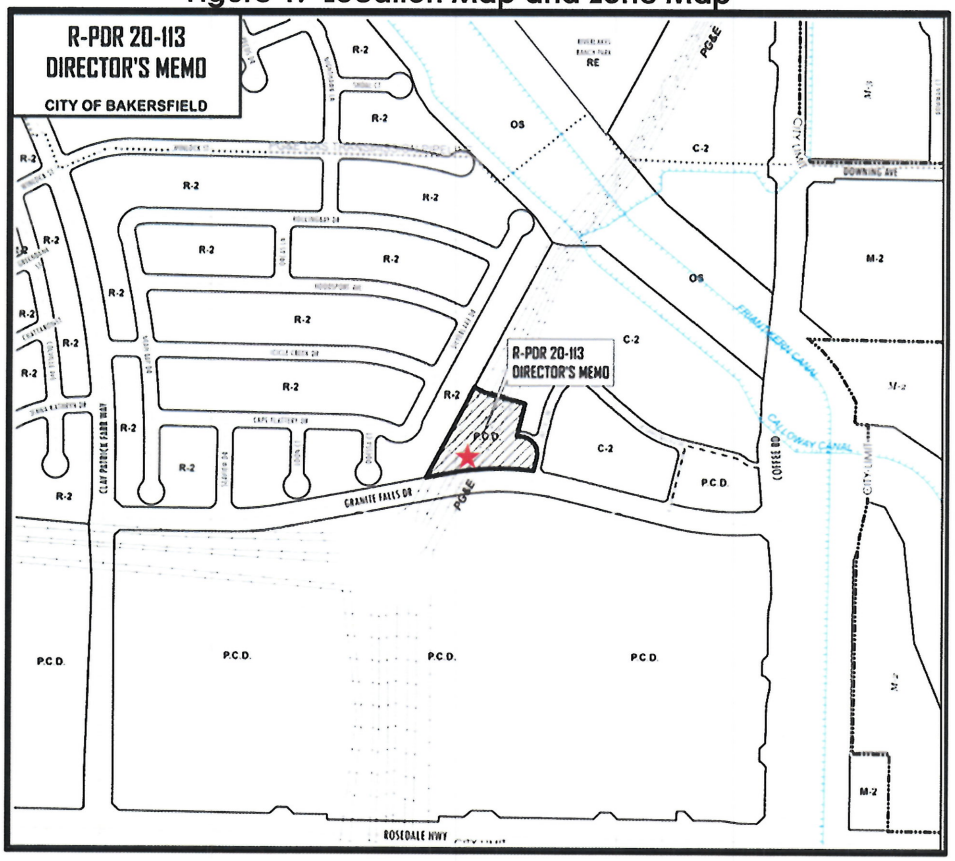
SUBJECT: **PLANNING DIRECTOR'S REPORT – REVISED PLANNED DEVELOPMENT REVIEW 20-0113 (WARD 4)**

APPLICANT: Paul Dhanens Architect, Inc.
1330 22nd Street, Suite 100
Bakersfield, CA 93301

OWNER: Jose Eduardo Salmeron
8450 Granite Falls Drive
Bakersfield, CA 93312

LOCATION: 8450 Granite Falls Drive | APN: 451-470-06

Figure 1. Location Map and Zone Map



RECOMMENDATION: Adopt Resolution **ACCEPTING** the Planning Director's Report on Revised Planned Development Review No. 20-0113.

PROJECT SUMMARY:

The project is a request to modify Planned Development Review (PDR) No. 98-0462 to enclose a patio to expand indoor dining space at an existing restaurant. Specifically, the proposed changes are located at the Señor Pepe's Mexican Restaurant at 8450 Granite Falls Drive in northwest Bakersfield.

SURROUNDING LAND USES:

The site and surrounding property's General Plan land use designation, zoning classification, and land use are specified in Table 1:

Table 1. Surrounding Land Uses

LOCATION	GENERAL PLAN	ZONE DISTRICT	EXISTING LAND USE
Site	MC	PCD	Commercial
North	GC	C-2	Commercial
East	GC	C-2	Commercial
South	MUC	PCD	Commercial
West	LMR	R-2	Single Family Homes

General Plan Key
MC: Major Commercial
GC: General Commercial
MUC: Mixed Use Commercial
LMR: Low Medium Density Residential

Zone District Key
PCD: Planned Commercial Development
C-2: Regional Commercial
R-2: Limited Multiple-Family Dwelling

BACKGROUND & TIMELINE:

October 1998. The City Council approved Zone Change and Planned Development Review No. P98-0462, authorizing the development of a 74,000 square foot shopping center (Ordinance No. 3867).

November 1999. The City Council approved Revised Planned Development Review No. P99-0515, allowing for a net increase in total floor area to allow a 127,500 square foot shopping center (Ordinance No. 3936).

Planning Director Review. Bakersfield Municipal Code Section 17.54.100.D allows the Planning Director to administratively approve minor changes, modifications, alterations, deviations or substitutions to an approved preliminary development plan provided the changes do not substantially or substantively change the project as approved by the Planning Commission or City Council. Such changes are generally limited to colors, materials, architectural elevations, landscape plans and other physical changes of a similar nature.

Should the Planning Director make a finding that submitted revisions to an approved PCD constitute minor changes or substitutions; the Director is to report that determination to your Commission at the next regular meeting. At that time, your Commission may: (1) accept the Planning Director's report; (2) further modify the Planning Director's approved changes; or, (3) Direct Staff to set the matter for public hearing. In this instance, Staff is recommending that your Commission accept the Planning Director's Report (Option 1).

ANALYSIS:

Señor Pepe's Mexican Restaurant is proposing to enclose an existing 1,770 square foot dining patio. According to the applicant, the existing patio dining area has been underutilized. By enclosing the patio as an addition to the building, the restaurant would be able to increase their interior dining space and better utilize their facility.

The proposed dining space will not increase the development footprint of the restaurant overall, and will not impede on the adjacent landscaped area. The architecture and construction materials have been designed to be consistent with the existing restaurant building. See Figures 2-4.

For restaurants, the parking ratio set forth in Chapter 17.58 of the Zoning Ordinance requires 1 parking space per 75 square feet of gross floor area. No additional parking is required for outdoor seating. By converting the 1,770 square feet of outdoor dining space to indoor dining, a total of 108 parking spaces are required. There are 133 parking spaces; therefore, sufficient parking is provided.

In addition to the standards established by the Bakersfield Municipal Code, the project is designed to comply with requirements of the Zoning Ordinance to include General Regulations (Chapter 17.08), Planned Commercial Development (Chapter 17.54), parking design (Chapter 17.58), and landscaping (Chapter 17.61).

No inconsistencies with City standards or policies have been identified and no deviations have been requested. The proposal has been found to be in compliance with all applicable ordinances and policies of the City.

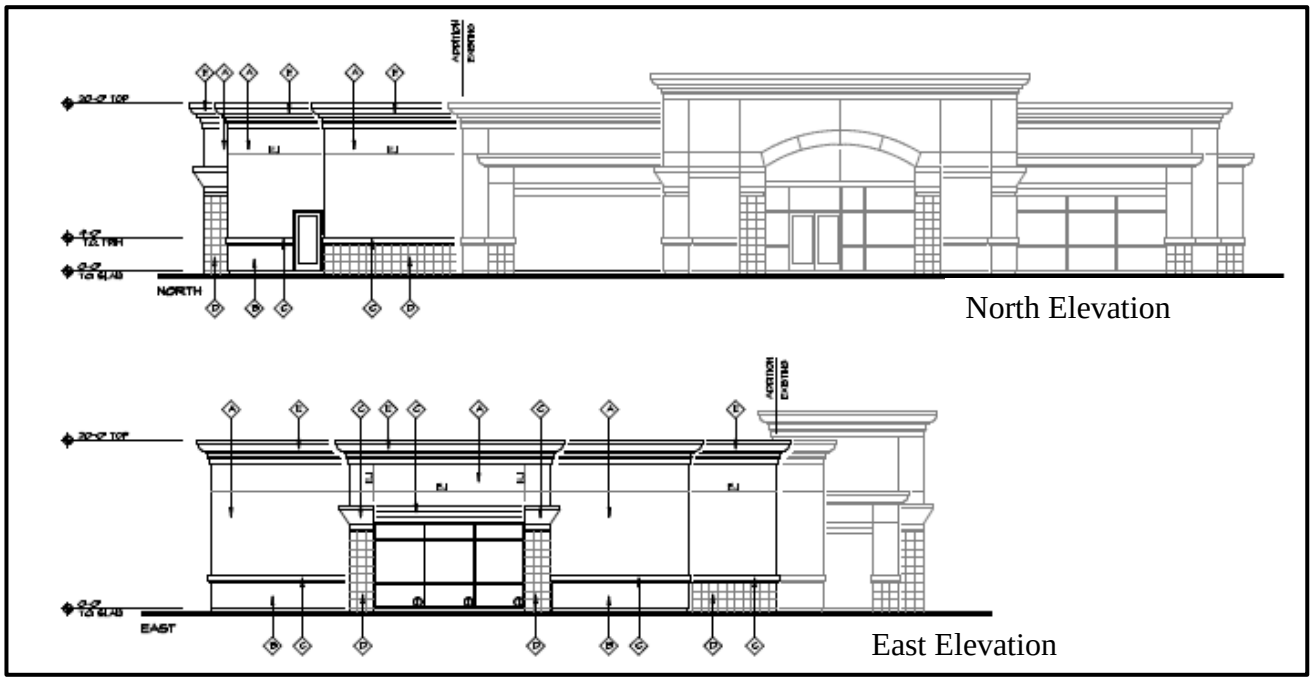
Figure 2. Site Plan



Figure 3. Existing Señor Pepe's Mexican Restaurant



Figure 4. Proposed Elevations



ENVIRONMENTAL REVIEW AND DETERMINATION:

In accordance with CEQA Guidelines Section 15301(Existing Facilities), this proposal is exempt from the requirements of CEQA because the proposed modifications are minor alterations of an existing structure with negligible expansion of existing uses. This action is not subject to a public hearing.

CONCLUSION:

As noted above, Zoning Ordinance Section 17.54.100.D allows the Planning Director to administratively approve substitutions to an approved final development plan with respect to colors, materials, architectural elevations and other physical changes provided such changes do not alter any use, environmental mitigation measure, conditions of approval or substantially affect the basic character of architecture established with the previous approval of the project.

Staff concludes the proposed physical changes are minor in nature and in substantial conformance with the originally approved design. There is no increase to the development footprint, no landscaping will be removed, and sufficient parking is provided. As required by the ordinance, the purpose of this report is to inform your Commission of this determination. It is Staff's recommendation that your Commission adopt the Resolution accepting the Planning Director's Report on Revised Planned Development Review No. 20-0113.

ATTACHMENTS:

Draft Resolution with Exhibits

RESOLUTION NO. ____

RESOLUTION OF THE PLANNING COMMISSION ACCEPTING THE PLANNING DIRECTOR'S REPORT TO MODIFY PLANNED COMMERCIAL DEVELOPMENT (NO. P98-0462) TO ENCLOSE A PATIO TO EXPAND INDOOR DINING SPACE AT AN EXISTING RESTAURANT IN A PCD (PLANNED COMMERCIAL DEVELOPMENT ZONE) DISTRICT LOCATED 8450 GRANITE FALLS DRIVE. (FILE NO. 20-0113)

WHEREAS, Paul Dhanens Architect, Inc. on behalf of Jose Salmeron (property owner) filed an application with the City of Bakersfield Development Services Department requesting to modify Planned Commercial Development (No. P98-0462) to enclose a patio to expand indoor dining space at an existing restaurant existing in a PCD (Planned Commercial Development Zone) district located at 8450 Granite Falls Drive; and

WHEREAS, the Secretary of the Planning Commission did set Thursday, June 18, 2020, at 5:30 p.m. in the Council Chambers, City Hall South, 1501 Truxtun Avenue, Bakersfield, California, as the time and place for consideration of the Planning Director's report; and

WHEREAS, the laws and regulations relating to CEQA and the City of Bakersfield's CEQA Implementation Procedures, have been duly followed by city staff and the Planning Commission; and

WHEREAS, the above described project is exempt from the requirements of the California Environmental Quality Act in accordance with State CEQA Guidelines Section 15301; and

WHEREAS, at said meeting held June 18, 2020, the Planning Director's report was duly considered, and the Planning Commission found as follows:

1. The proposal is not subject to a public hearing.

2. The provisions of the California Environmental Quality Act (CEQA) have been followed.

3. Pursuant to State CEQA Guidelines Section 15301, this request is exempt from the requirements of CEQA because it will not affect the environment.

4. The proposed modifications to the approved development plan do not deviate from the intent and purpose of the PCD zone district.

5. The proposed development will constitute a land use of sustained desirability and stability, and it will compliment and harmonize with the character of the surrounding neighborhood and community.

6. The proposed modifications to the approved development plan are consistent with the General Plan and objectives of Title 17 of the Bakersfield Municipal Code.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF BAKERSFIELD as follows:

1. The recitals above are true and correct and incorporated herein by this reference.

2. The project is exempt from CEQA.

3. The Planning Commission accepts the Planning Director's report.

I HEREBY CERTIFY that the foregoing resolution was passed and adopted by the Planning Commission of the City of Bakersfield at a regular meeting thereof held on the 18th day of June 2020, on a motion by Commissioner _____ and seconded by Commissioner _____, by the following vote.

AYES:

NOES:

ABSENT:

APPROVED

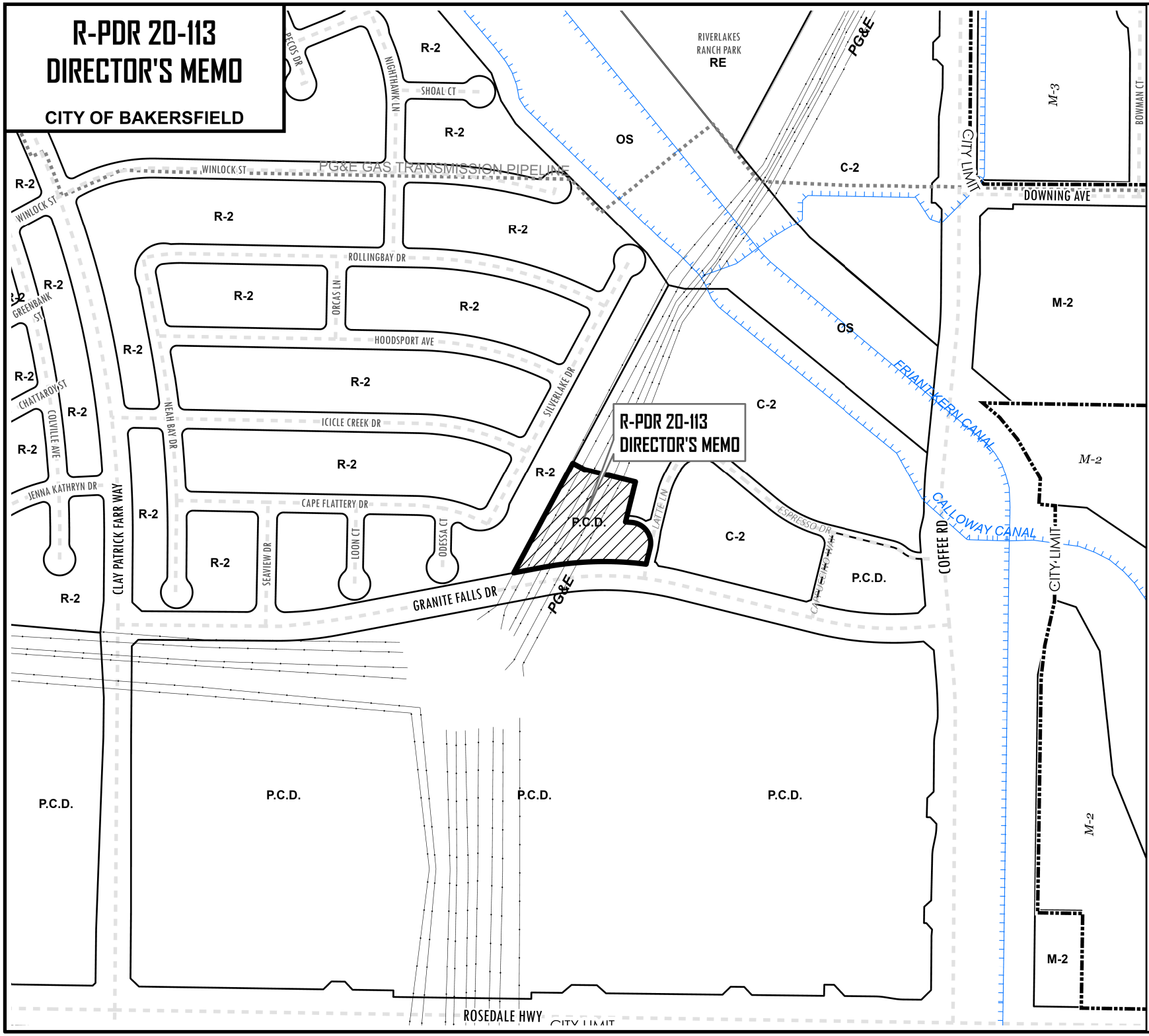
_____
LARRY KOMAN, CHAIR
City of Bakersfield Planning Commission

Exhibits:

A. Location Map
B. Site Plan and Elevation

R-PDR 20-113
DIRECTOR'S MEMO

CITY OF BAKERSFIELD



LEGEND (ZONE DISTRICTS)

R-1 One Family Dwelling
6,000 sq.ft. min lot size
R-1-4.5 One Family Dwelling
4,500 sq.ft. min lot size
E Estate
10,000 sq.ft. min lot size
R-S Residential Suburban
24,000 sq.ft./dwelling unit
R-S-( ) Residential Suburban
1, 2.5, 5 or 10 min lot size
R-2 Limited Multiple Family Dwelling
4,500 sq.ft. min lot size (single family)
6,000 sq.ft. min lot size (multifamily)
2,500 sq.ft. lot area/dwelling unit
R-3 Multiple Family Dwelling
6,000 sq.ft. min lot size
1,250 sq.ft. lot area/dwelling unit
R-4 High Density Multiple Family Dwelling
6,000 sq.ft. min lot size
600 sq.ft. lot area/dwelling unit
R-H Residential Holding
20 acre min lot size
A Agriculture
6,000 sq.ft. min lot size
A-20A Agriculture
20 acre min lot size
PUD Planned Unit Development
TT Travel Trailer Park
MH Mobilehome
C-O Professional and Administrative Office
C-1 Neighborhood Commercial
C-2 Regional Commercial
C-C Commercial Center
C-B Central Business
PCD Planned Commercial Development
M-1 Light Manufacturing
M-2 General Manufacturing
M-3 Heavy Industrial
P Automobile Parking
RE Recreation
Ch Church Overlay
OS Open Space
HOSP Hospital Overlay
AD Architectural Design Overlay
FP-P Floodplain Primary
FP-S Floodplain Secondary
AA Airport Approach
DI Drilling Island
PE Petroleum Extraction Combining
SC Senior Citizen Overlay
HD Hillside Development Combining
WM- West Ming Specific Plan

BAKERSFIELD

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Feet

0 220 440

Document Name: 2020_06_01



SITE PLAN

20'

PROJECT ANALYSIS

ASSESSORS PARCEL NUMBER:	451-470-06
ADDRESS:	8450 GRANITE FALLS DRIVE
APPLICABLE CODES:	2019 CBC / 2019 CMC / 2019 CPC/ 2019 CEC / 2019 CFC / 2019 CGBSC
ZONING:	PCD
CONSTRUCTION TYPE:	V-B
BUILDING OCCUPANCY:	A-2 (ASSEMBLY GROUP)
FIRE SPRINKLERS:	YES (TO BE INSTALLED W/ THIS PROJECT)
BUILDING AREA:	
EXISTING RESTAURANT:	6,300 SF
PROPOSED ADDITION	1,770 SF
TOTAL:	8,070 SF

PARKING ANALYSIS

PROPOSED USE	AREA	PARKING RATIO	REQ'D PARKING
RESTAURANT:	8,070 SF	(1/75)	108 SPACES
PARKING PROVIDED:			133 SPACES

KEYNOTES

1. EXISTING 9' x 18' PARKING STALL PER CITY STANDARDS
2. EXISTING 9'-0"x 18'-0" HANDICAP PARKING STALL WITH 3'-0"x3'-0" PAINTED STALL SIGN AND 70" SQ IN POLE MOUNTED PARKING SIGN DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY WITH AN ADDITIONAL SIGN OR LANGUAGE STATING "MINIMUM FINE $250.00" INCLUDE SIGN MOUNTED BELOW STATING "VAN ACCESSIBLE" PER CBC SECTION 1248-80" MINIMUM HEIGHT TO THE BOTTOM OF ALL POLE SIGNS
3. EXISTING MINIMUM 5'-0" WIDE HANDICAP ACCESS AISLE FOR VAN ACCESS WITH THE WORDS "NO PARKING" IN 12" HIGH CONTRASTING LETTERS- SLOPE NOT TO EXCEED 1/4 :12
4. EXISTING 4'-0" WIDE HANDICAP ACCESSIBLE CURB RAMP- INSTALL RAISED TRUNCATED DOME TILES FOR THE FULL WIDTH OF BOTTOM LANDING PER CITY STANDARDS
5. EXISTING CONCRETE WALK WITH SLOPE NOT TO EXCEED 1:20 - CROSS SLOPE NOT TO EXCEED 1/4 :12
6. LANDSCAPE AREA
7. EXISTING CONCRETE BLOCK TRASH ENCLOSURE
8. PATH OF TRAVEL
9. EXISTING MINIMUM 6' HIGH CONCRETE MASONRY BLOCK WALL
10. 25' WIDE LANDSCAPE RESERVATION
11. 20' WIDE COVENANT OF EASEMENT PER DOCUMENT NO 20001243
12. 80' WIDE TOWER LINE EASEMENT IN FAVOR OF PACIFIC GAS & ELECTRIC PER BOOK 3302, PAGE 69 AND AMENDED PER BOOK 6153, PAGE 1682 & RE- RECORDED PER BOOK 6171, PAGE 1210, ALL OF OFFICIAL RECORDS
13. 100' WIDE TOWER LINE EASEMENT IN FAVOR OF SOUTHERN CALIFORNIA EDISON CO. PER BOOK 3302, PAGE 191 AND AMENDED PER BOOK 6153, PAGE 1682 AND CONVEYED TO PACIFIC GAS & ELECTRIC PER BOOK 5084, PAGE 2430, ALL OF OFFICIAL RECORDS
14. 100' WIDE TOWER LINE EASEMENT IN FAVOR OF SOUTHERN CALIFORNIA EDISON CO. PER BOOK 3302, PAGE 191 AND AMENDED PER BOOK 6153, PAGE 1682 AND CONVEYED TO PACIFIC GAS & ELECTRIC PER BOOK 5084, PAGE 2430, ALL OF OFFICIAL RECORDS

PAUL DHANENS • ARCHITECT

ARCHITECT

LICENSED ARCHITECT PAUL DHANENS NO. C-23843 RENEWAL STATE OF CALIFORNIA

1330 22ND STREET, SUITE 100
BAKERSFIELD, CALIFORNIA 93301
TELEPHONE: (661) 328-8838
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NOTICE TO CONTRACTORS

Contractor to verify these drawings shall take precedence over scaled dimensions. Contractor shall verify and be responsible for confirming all dimensions and shall notify the architect immediately of any discrepancies or field variations discovered.

PROJECT

BUILDING ADDITION FOR

SEÑOR PEPE'S

8450 GRANITE FALLS DR
BAKERSFIELD, CA

DATE	ISSUED FOR
4-30-20	OWNER REVIEW
5-4-20	PLANNING DEPT SUBMITTAL

NO.	REVISIONS
1	
2	
3	
4	

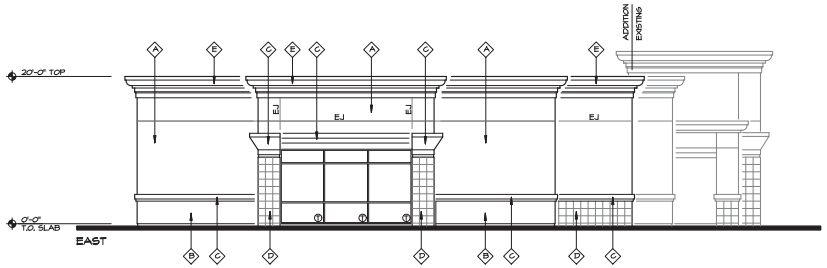
SITE PLAN

FILE NAME: 2575A1-0

SHEET

A-1.0









EXTERIOR ELEVATION SPECIFICATIONS

07240 CEMENT PLASTER FINISH

1. TYPICAL EXTERIOR FINISH SHALL BE DRYVIT COLOR COAT OVER CEMENT PLASTER SCRATCH AND BROWN COAT OVER APPROVED METAL LATH AND BUILDING PAPER.
2. METAL LATH SHALL BE SIXTEEN (16) GAUGE WIRE FABRIC LATH OR ONE AND ONE-QUARTER (1 1/4") INCH GALVANIZED WIRE MESH OVER TWO (2) LAYERS OF GRADE 'D' PAPER FOR WALLS AND THREE-EIGHTHS (3/8") INCH HIGH RIB EXPANDED METAL LATH OVER TWO (2) LAYERS OF GRADE 'D' PAPER AT EAVES AND SOFFITS AS MANUFACTURED BY 'K-LATH' OR EQUAL.
3. ALL PLASTERING SHALL COMPLY WITH CALIFORNIA BUILDING CODE.

07600 FLASHING AND SHEET METAL

1. CONCEALED THROUGH-WALL FLASHING AT MASONRY SHALL BE 0.0156 INCH STAINLESS STEEL, ASTM A 167, TYPE 304, DEAD ANNEALED, WITH NO. 2D FINISH, EXCEPT WHERE HARDER TEMPER IS REQUIRED FOR FORMING OR PERFORMANCE.
2. ALL METAL FLASHINGS SHALL BE MINIMUM TWENTY-SIX (26) GAUGE GALVANIZED IRON TO CONFORM TO A.S.T.M. A-446, GRADE A, A-526 OR A-527 AS APPROPRIATE, LOCATED AND INSTALLED IN ACCORDANCE WITH S.M.A.C.N.A. ARCHITECTURAL SHEET METAL MANUAL AND SPECIFICATIONS.
3. LEAD FLASHING SHALL BE ASTM B 749, TYPE L52121, COPPER-BEARING LEAD SHEETS, MINIMUM 0.0625 INCH THICK EXCEPT NOT LESS THAN 0.0937 INCH THICK FOR APPLICATIONS WHERE BURNING (WELDING) IS INVOLVED.
4. SHEET METAL WORK SHALL BE MADE AND APPLIED IN ACCORDANCE WITH THE BEST PRACTICES OF THE INDUSTRY. JOINTS SHALL BE NEATLY RIVETED, SOLDERED OR LOCK JOINTED AS REQUIRED FOR A COMPLETE INSTALLATION.
5. MATERIALS USED FOR TRIMMING AND SOLDERING FLASHING SHALL CONSIST OF ONE-HALF (1/2) LEAD AND ONE-HALF (1/2) BLOCK TIN, USING NOKORODE AS A FLUX.
6. JOINTS AND SPACES TO BE CAULKED OR SEALED SHALL BE COMPLETELY CLEANED OF ALL DIRT, DUST, MORTAR, AND DEBRIS WHICH MIGHT ADVERSELY AFFECT THE CAULKING WORK. WHERE NECESSARY, DEGREASE WITH AN APPROVED SOLVENT OR COMMERCIAL DEGREASING AGENT. SURFACES SHALL BE THOROUGHLY DRY BEFORE APPLICATION OF ANY CAULKING COMPOUNDS.
7. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION OF ALL FLASHING.

07900 SEALANTS AND CAULKING

1. WORK SHALL INCLUDE SEALING AND CAULKING JOINTS WHERE SHOWN ON THE DRAWINGS AND ELSEWHERE AS REQUIRED TO PROVIDE A POSITIVE BARRIER AGAINST OF MOISTURE AND AIR.
2. SEALANTS AND CAULKING SHALL BE AS MANUFACTURED BY "DOW CORNING", OR EQUAL. PRODUCTS SHALL BE SPECIALLY FORMULATED FOR THE PROPOSED USE AND APPROVED IN ADVANCE BY THE ARCHITECT.
3. COLORS FOR EACH INSTALLATION SHALL BE SELECTED BY THE ARCHITECT FROM STANDARD COLORS NORMALLY AVAILABLE FROM THE SPECIFIED MANUFACTURER. IN CONCEALED INSTALLATIONS USE STANDARD GRAY OR BLACK COLOR.
4. PROVIDE OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION.

08100 METAL DOORS AND FRAMES

1. PROVIDE FULL-FLUSH DESIGN, 1 3/4" 16 GAUGE HOLLOW METAL DOORS PROPERLY REINFORCED FOR THE FINISH HARDWARE. DOORS SHALL BE FACTORY PRIMED AND READY FOR INSTALLATION BY "AMWELD" OR EQUAL.
2. METAL FRAMES SHALL BE 16 GAUGE BY "AMWELD" OR EQUAL.
3. ALL HOLLOW METAL DOORS AND FRAMES SHALL COMPLY WITH S.D.I. 100-64 "RECOMMENDED SPECIFICATIONS FOR HOLLOW METAL DOORS AND FRAMES."

08410 ALUMINUM ENTRANCES AND STOREFRONTS

1. ALUMINUM ENTRANCES SHALL BE MEDIUM STILE DOOR AS MANUFACTURED BY "UNITED STATES ALUMINUM" OR EQUAL. SEE PLANS FOR COLOR. FINISH HARDWARE SHALL BE STANDARD PACKAGE WITH OPTIONAL CONCEALED CLOSER AND STYLE "V" PUSH/PULL UNLESS NOTED OTHERWISE
2. ALUMINUM STOREFRONT SHALL BE 2"x4.5" DUAL GLAZED CENTER LOADED OUTSIDE MOUNTED BY "UNITED STATES ALUMINUM". SEE PLAN FOR COLOR. INCLUDE ALL FLASHING AND ACCESSORIES FOR A COMPLETE INSTALLATION.

08800 GLAZING

1. GLAZING SHALL BE 1" INSULATED BY 'PPG' WITH 1/4" GUARDIAN CRYSTAL-GRAY (EXTERIOR), 1/2" AIR FILL, AND 1/4" GUARDIAN SUN-GUARD SUPER-NEUTRAL 68 ON CLEAR LOW-E (INTERIOR) OR EQUAL COMPLYING WITH T-24 ENERGY REQUIREMENTS- WINTER U-FACTOR=0.29, SHGC=0.35, AND VLT=48
2. PROVIDE TEMPERED OR HEAT-STRENGTHENED GLASS WHERE INDICATED ON THE DRAWINGS OR AS REQUIRED BY MANUFACTURER FOR WARRANTED INSTALLATION

EXTERIOR FINISH LEGEND

- (A) CEMENT PLASTER MAIN FIELD COLOR - MATCH EXISTING
- (B) CEMENT PLASTER ACCENT COLOR - MATCH EXISTING
- (C) CEMENT PLASTER ACCENT COLOR - MATCH EXISTING
- (D) STONE VENEER - MATCH EXISTING
- (E) FOAM CORNICE - MATCH EXISTING - SEE DETAIL

EXTERIOR ELEVATIONS

1/8"

PAUL DHANENS • ARCHITECT

ARCHITECT

LICENSED ARCHITECT PAUL DHANENS NO. C-23843 RENEWAL STATE OF CALIFORNIA

1330 22ND STREET, SUITE 100
BAKERSFIELD, CALIFORNIA 93301
TELEPHONE: (661) 328-8638
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NOTICE TO CONTRACTORS

Written dimensions on these drawings shall take precedence over scaled dimensions. Contractor shall verify and be responsible for confirming all dimensions and shall notify the architect immediately of any discrepancies or field variations discovered.

PROJECT

BUILDING ADDITION FOR

SEÑOR PEPE'S

8450 GRANITE FALLS DR
BAKERSFIELD, CA

DATE	ISSUED FOR
4-30-20	OWNER REVIEW
5-2-20	PLANNING DEPT SUBMITTAL

NO.	REVISIONS
1	
2	
3	
4	

EXTERIOR ELEVATIONS

FILE NAME: 2575A2-0

SHEET

A-2.0

COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020

ITEM NUMBER: Consent Calendar Public Hearings5.(a.)

TO: Planning Commission

FROM: Paul Johnson, Planning Director

PLANNER: Tony Jaquez, Associate Planner

DATE:

WARD: Ward 5

SUBJECT:
Vesting Tentative Tract Map 7334 (Phased): McIntosh and Associates is proposing to subdivide 20.07 acres into 66 multi-family residential lots in an R-2 (Limited Multi-Family Dwelling) zone located at the northeast corner of Panama Lane and South Allen Road. Mitigated Negative Declaration on file.

APPLICANT: McIntosh and Associates

OWNER: Wings Way, LLC

LOCATION: Located at the northeast corner of Panama Lane and South Allen Road in southwest Bakersfield.

STAFF RECOMMENDATION:
Staff recommends to continue this item to the July 16, 2020 meeting.

ATTACHMENTS:

	Description	Type
🗋	Staff Report	Staff Report

BAKERSFIELD
THE SOUND OF Something Better

CITY OF BAKERSFIELD
PLANNING DEPARTMENT
STAFF REPORT

TO: Chair Koman and Members of the Planning Commission AGENDA ITEM: 5.a.

FROM: Paul Johnson, Planning Director APPROVED: PJ

DATE: June 18, 2020

SUBJECT: **VESTING TENTATIVE TRACT 7334 – PHASED (WARD 5)**

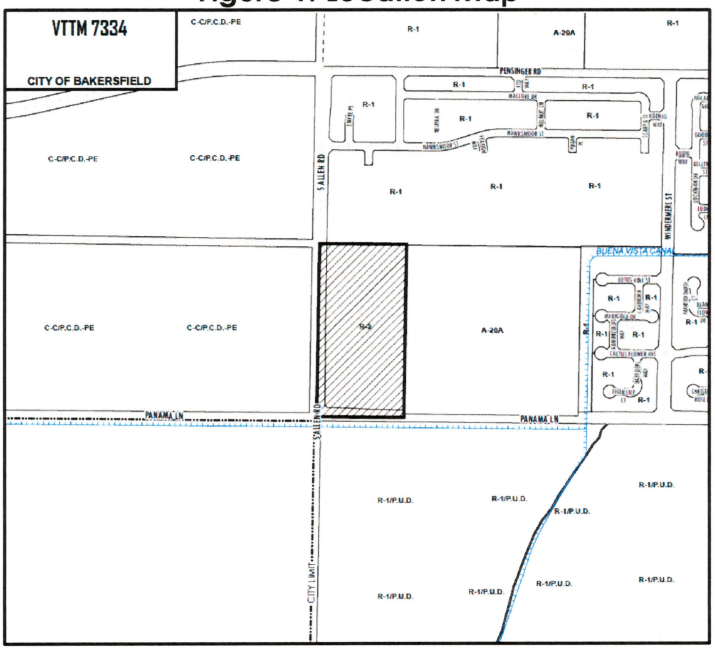
APPLICANT:

ENGINEER
McIntosh & Associates
2001 Wheelan Court
Bakersfield, CA 93309

SUBDIVIDER/PROPERTY OWNER
Wings Way, LLC
9201 Camino Media, Suite 120
Bakersfield, CA 93311

LOCATION: Located at the northeast corner of Panama Lane and South Allen Road in southwest Bakersfield (APN #: 535-010-50)

Figure 1. Location Map



This project was scheduled for consideration at today's meeting. However, the applicant has requested the public hearing for Vesting Tentative Tract Map 7334 be continued to the July 16, 2020 regularly scheduled Planning Commission meeting. This will allow additional time for the applicant to satisfy the mineral rights requirements per BMC 16.20.060.

RECOMMENDATION: Continue to July 16, 2020.

COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020

ITEM NUMBER: Consent Calendar Public Hearings5.(b.)

TO: Planning Commission

FROM: Paul Johnson, Planning Director

PLANNER: Steve Esselman, Principal Planner

DATE:

WARD: Ward 7

SUBJECT:
General Plan Amendment/Zone Change No. 19-0292. Lane Engineers, Inc. requests a General Plan Amendment/Zone Change on approximately 20.55 acres located at the northeast corner of the Taft Highway and South H Street consisting of: (1) an amendment to the Land Use Element designation from GC (General Commercial) to LI (Light Industrial), or a more restrictive designation; and (2) a change in zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing), or a more restrictive classification. Mitigated Negative Declaration on file.

APPLICANT: Lane Engineers, Inc.

OWNER: Elmer F. Carpe, Inc.

LOCATION: Located at the northeast corner of the Taft Highway/H Street intersection (APNs 517-030-06 and -08).

STAFF RECOMMENDATION:
Staff recommends approval.

ATTACHMENTS:

	Description	Type
🗋	Staff Report	Staff Report
🗋	Resolution Approving GPA w/ Exhibits	Resolution
🗋	Resolution Approving ZC w/ Exhibits	Resolution
🗋	Resolution Adopting MND w/ Exhibits	Resolution
🗋	CEQA Document - MND	Backup Material
🗋	AQ/GHG Study	Backup Material
🗋	Biology Study	Backup Material
🗋	Cultural Study	Backup Material
🗋	Noise Study	Backup Material
🗋	Traffic Study (Revised May 2020)	Backup Material

Traffic Consultant Response to Caltrans	Backup Material
Water Will-Serve Letter	Backup Material
KCSOS Comment Letter	Correspondence
PG&E Comment Letter	Correspondence
CalGEM (formerly DOGGR) Comment Letter	Correspondence
KDWD Comment Letter	Correspondence
Caltrans Comment Letter	Correspondence
SPR Draft Conditions	Backup Material

CITY OF BAKERSFIELD
PLANNING DIVISION
STAFF REPORT

TO: Chair Koman and Members of the Planning Commission AGENDA ITEM: 5.b

FROM: Paul Johnson, Planning Director APPROVED: PJ

DATE: June 18, 2020

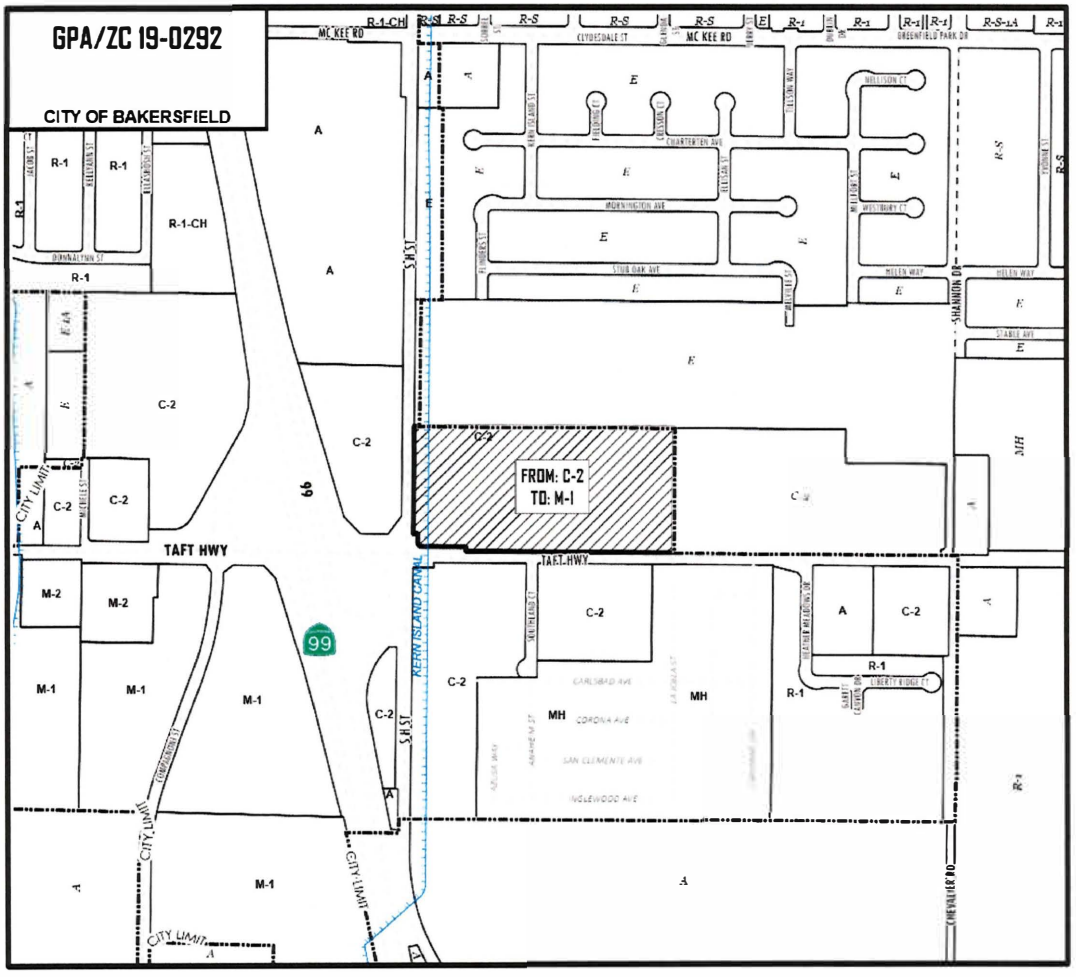
SUBJECT: **GENERAL PLAN AMENDMENT/ZONE CHANGE NO. 19-0292 (WARD 7)**

APPLICANT: Lane Engineers, Inc.
PO Box 1059
Tulare, CA 93275

OWNER: Elmer F. Karpe, Inc.
8501 Camino Media
Bakersfield, CA 93319

LOCATION: Northeast corner of Taft Highway & South H Street intersection | APN: 517-030-06 and -08

Figure 1. Location Map and Zone Map



RECOMMENDATION: Adopt Resolutions:

1. **APPROVING** the General Plan Amendment to change the land use designation from GC (General Commercial) to LI (Light Industrial) or a more restrictive designation, and recommend same to City Council.
2. **APPROVING** the Zone Change from C-2 (Regional Commercial) to M-1 (Light Manufacturing) or a more restrictive classification, and recommend same to City Council.
3. **ADOPTING** the Mitigated Negative Declaration and recommend same to City Council.

PROJECT SUMMARY:

The project is a request from Lane Engineers, Inc., representing Elmer F. Karpe, Inc., for a General Plan Amendment/Zone Change (GPA/ZC) on 20.55 gross acres (17.65 net acres) located at the northeast corner of the Taft Highway & South H Street intersection. The request includes: (1) an amendment of the Land Use Element of the *Metropolitan Bakersfield General Plan* from GC (General Commercial) to LI (Light Industrial), see Figure 2; and (2) a change in zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing), see Figure 3.

Figure 2. Existing/Proposed Land Use Designation

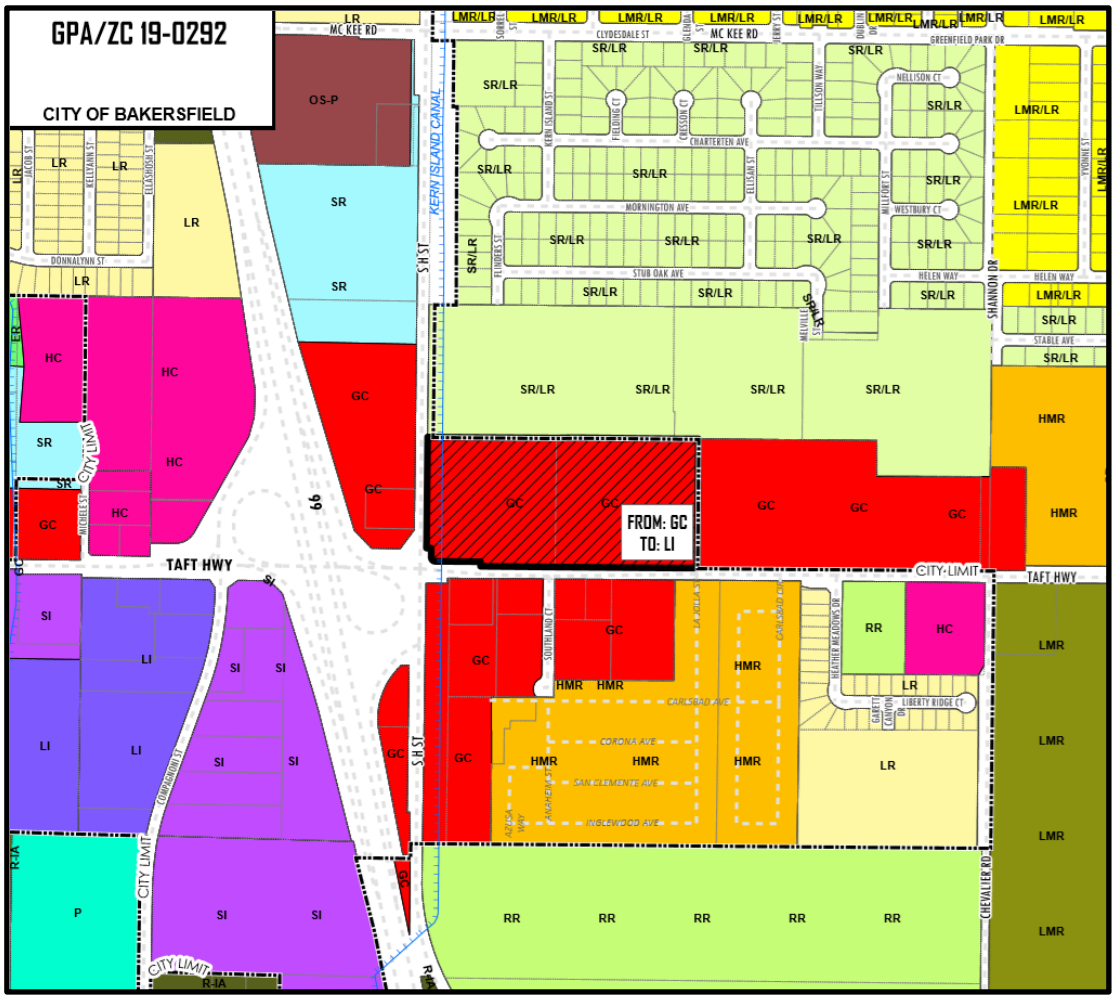
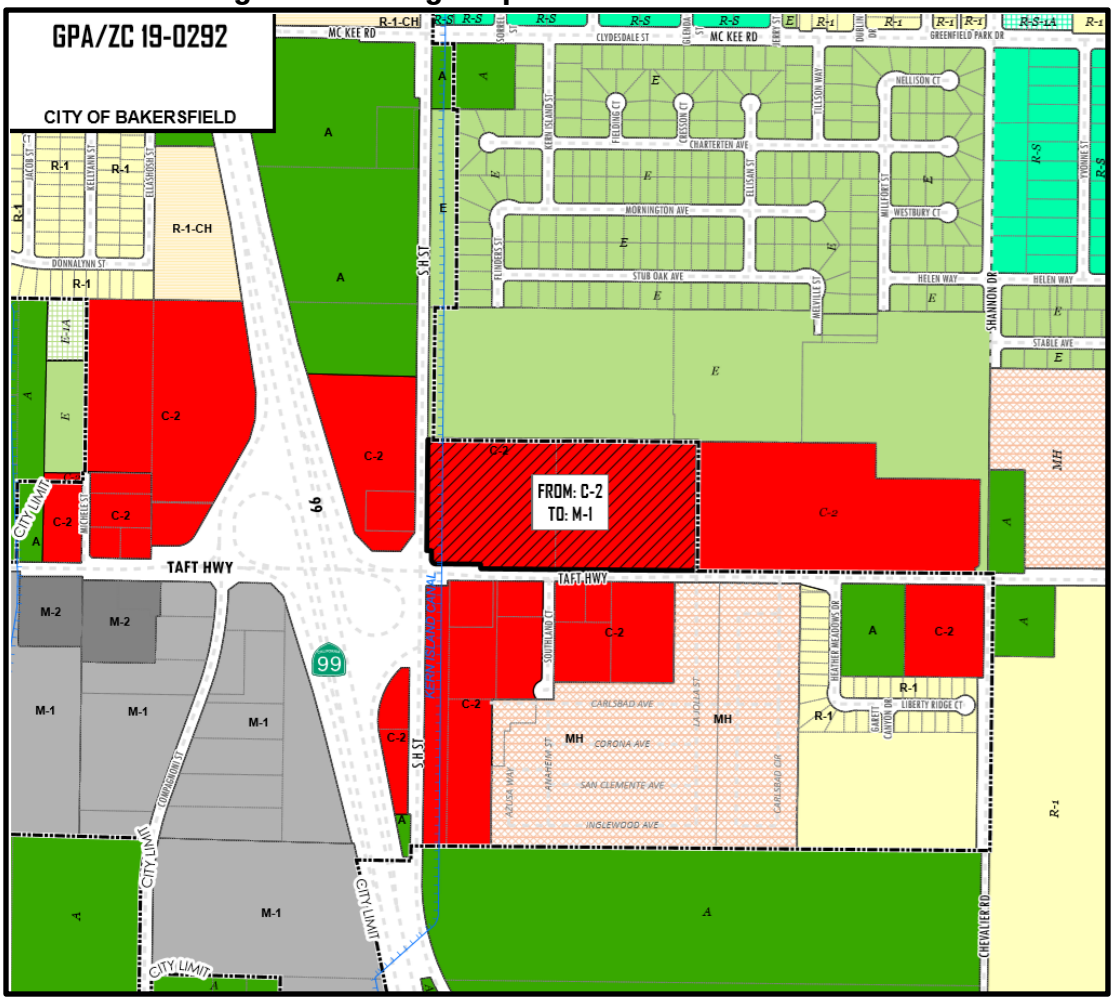


Figure 3. Existing/Proposed Zone Classification



SURROUNDING LAND USES:

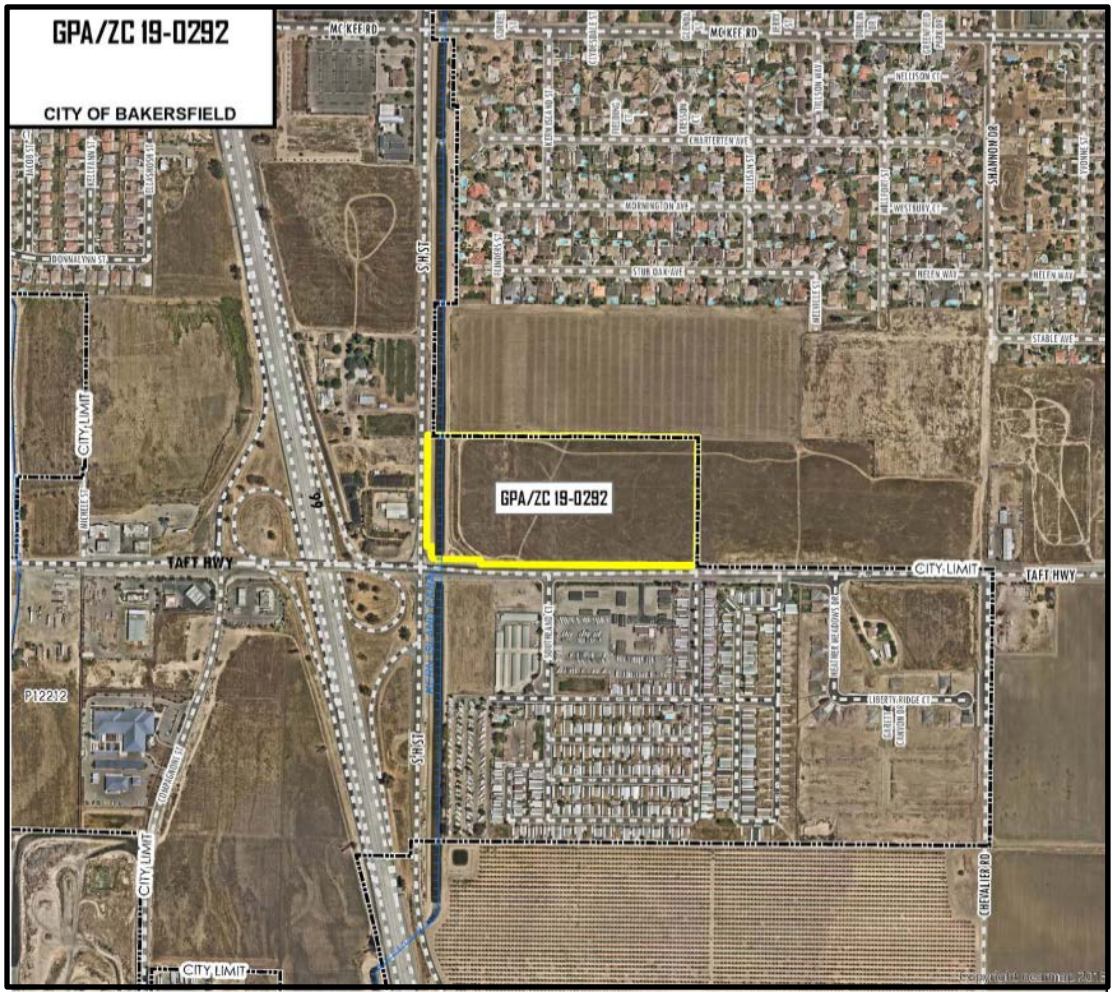
The site and surrounding property's General Plan land use designation, zone classification, and existing land use are specified in Table 1 and shown in Figure 4:

Table 1. Surrounding Land Uses

LOCATION	GENERAL PLAN	ZONE DISTRICT	EXISTING LAND USE
Site	GC	C-2	Vacant
North	SR/LR (County)	E (County)	Vacant
East	GC (County)	C-2 (County)	Vacant
South	GC/HMR	C-2 and MH	Taft Hwy, Commercial, Residential
West	GC	C-2	Commercial and State Route 99

General Plan Key	Zone District Key
GC: General Commercial SR/LR (County): Less than or equal to four dwelling units per net acre HMR (County): High Medium Density Res.	C-2 (City): Regional Commercial C-2 (County): General Commercial E (County): Estate MH: Mobile Home

Figure 4. Aerial Photograph



BACKGROUND & TIMELINE:

- January 1998. The City Council adopted pre-zoning of the subject properties to C-2 upon annexation of the properties into the City.
- July 2011. The project site, along with a larger area, was annexed into the City (South H Street No. 2).
- March 2020. This request was originally scheduled for consideration by your Commission at the March 5, 2020 Planning Commission meeting. However, additional time was required for the applicant to submit a site plan that demonstrates the proposed travel stop can be development in conformance with comments received and City development standards. Therefore, the project was referred "back to staff" for re-advertisement at a later date.

ANALYSIS:

Proposed GPA/ZC. As noted above, the project is a request for the following:

1. An amendment of the Land Use Element from GC (General Commercial) to LI (Light Industrial). The GC designation provides for retail and service facilities providing a broad range of goods and services which serve the day-to-day needs of nearby residents. The LI designation provides for unobtrusive industrial activities that can locate in close proximity to residential and commercial uses with a minimum of environmental conflicts.

2. A change in zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing). The C-2 classification provides for development of concentrated large-scale retail operations providing a broad range of goods and services which serve the metropolitan market area. The M-1 classification is the more restrictive of the three manufacturing zones in the City's Zoning Ordinance.

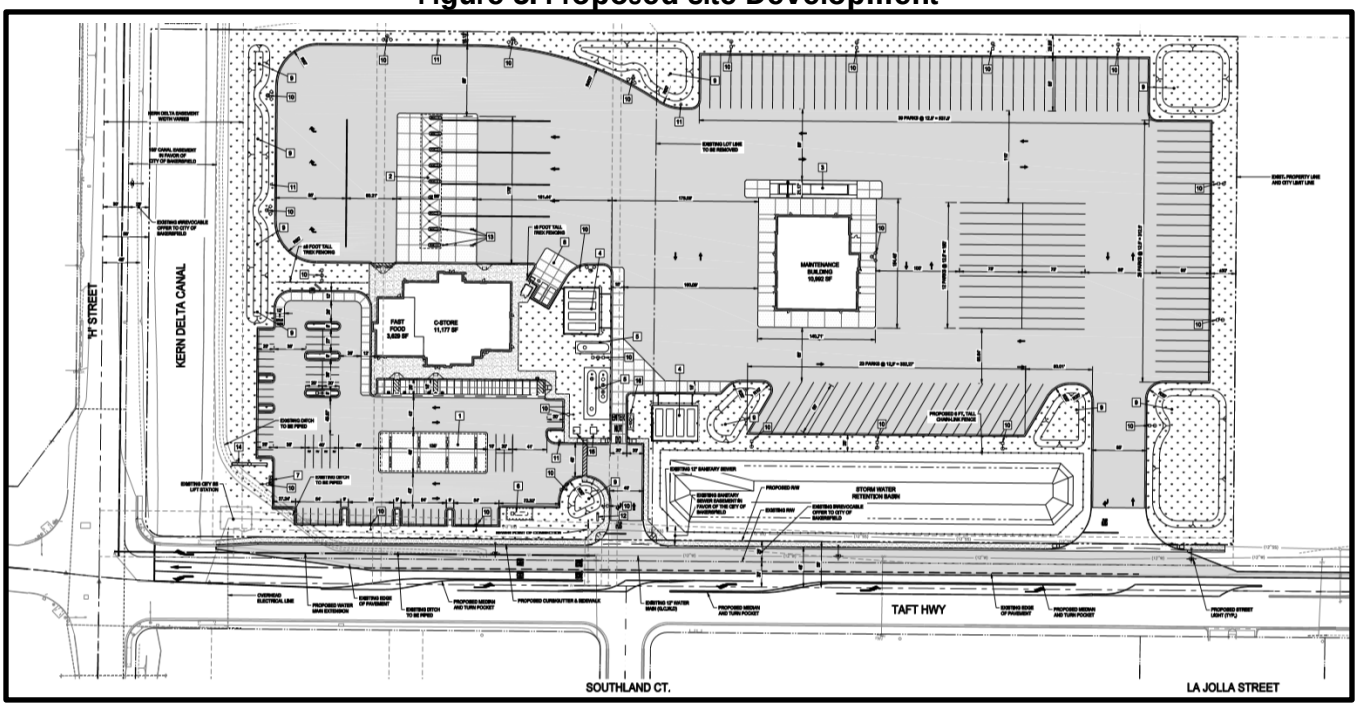
Proposed Site Development. Should the request be approved, the applicant is proposing to develop the site with a "Love's Travel Stop and Country Store". Development would consist of multiple uses including approximately 8 passenger fueling islands, 9 truck fueling islands, 3,629 square foot fast food restaurant, 11,177 square foot convenience store, 10,992 square foot truck maintenance building, 88 passenger vehicle parking spaces, and 111 truck parking spaces, see Figure 5.

The development is focused on travelers (auto and truck) stopping for fuel, rest, and/or food. The proposed travel stop would be operational 24 hours a day, 7 days a week. The on-site maintenance building would provide service to semi-trucks including repairing and replacing truck tires and light maintenance (e.g., air filters, wiper blades, oil and other fluid changes). No major engine repairs or other major mechanical services would be performed on site. Access to the project site is proposed from two ingress/egress points off State Route 119 (Taft Highway).

The proposed development predominantly provides amenities more typical of a regional commercial center, with the exception of the truck maintenance building. Therefore, the change in zone classification from C-2 to M-1 is required to accommodate the "truck stop".

Site Plan Review. The proposed development (Figure 5) has gone through a separate Site Plan Review (SPR) process. The SPR allows the Building, Planning, Fire Department, Water Resources, Engineering, Traffic, and Solid Waste Departments to review the project and ensure development plans adhere to all applicable City development standards, policies, and ordinances. A copy of the draft conditions of approval for the development are included for your Commission's reference. See attachment "SPR Draft Conditions".

Figure 5. Proposed Site Development



Compatibility with Land Use Element. Staff has reviewed the proposal for compatibility with the goals and policies contained within the *Metropolitan Bakersfield General Plan Land Use Element*, and the results of the review are as follows:

Goal 1. Accommodate new development which captures the economic demands generated by the marketplace and establishes Bakersfield's role as the capital of the southern San Joaquin Valley.

The project is consistent with this goal because the owner determined the market is driving a need for a travel stop and therefore, requested the GPA/ZC to serve this need.

Goal 2. Accommodate new development which provides a full mix of uses to support its population.

The project is consistent with this goal because it provides the first large-scale travel stop within the City limits and therefore, increases the overall mix of uses to support the local population as well as visitors and truck drivers passing through the City.

Goal 3. Accommodate new development which is compatible with and compliments existing land uses.

The project is consistent with this goal because it allows for a travel stop that predominantly provides amenities typical of a regional commercial center. Additionally, it provides a maintenance building supplying light maintenance services to semi-trucks. The project is also compatible with, and compliments the existing land use, namely future City and County regional commercial, and future/existing County residential homes.

Goal 4. Accommodate new development which channels land uses in a phased, orderly manner and is coordinated with the provision of infrastructure and public improvements.

The project is consistent with this goal because it is phased and orderly and necessary infrastructure and public improvements are available or able to be provided.

Policy 34. Provide for the clustering of new industrial development adjacent to existing industrial uses and along major transportation corridors.

The project site is 20.55 gross acres (17.65 net acres) that concentrates travel services at one location and is located just east of SR-99 and adjacent to and north of Taft Highway, both of which are major transportation corridors. Therefore, the project clusters travel services adjacent to two major transportation corridors.

Policy 35. Encourage upgrading of visual character of heavy manufacturing industrial areas through the use of landscaping or screening of visually unattractive buildings and storage areas.

Any development on the property is subject to the Site Plan Review process. During this review, City Staff will ensure development plans adhere to all applicable City development standards, policies, and ordinances.

Policy 36. Require that industrial uses provide design features, such as screen walls, landscaping and height, setback and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to light, noise, sound and vibration.

Any development on the property is subject to the Site Plan Review process. This process will ensure the project is consistent with City requirements that industrial uses provide design features, such as screen walls, landscaping and height, setback and lighting restrictions between the boundaries of adjacent residential land use designations.

Policy 37. Street frontages along new industrial development shall be landscaped.

Any development on the property is subject to the Site Plan Review process. This process will ensure that street frontages along the project site would be landscaped in accordance with the City's landscaping standards.

Policy 38. Minimize impacts of industrial traffic on adjacent residential parcels through the use of site plan review and improvement standards.

Mobile homes are existing near the project site to the south. Any development on the property is subject to the Site Plan Review process. This process will ensure traffic considerations are fully vetted. Additionally, if the project were approved, the project would be subject to enforceable traffic mitigation. The Mitigated Negative Declaration prepared for this project concluded that the project's participation in the Regional Traffic Impact Fee program would reduce traffic impacts to less than significant.

Policy 75. Provide adequate land area for the expansion of existing uses and development of new uses consistent with the policies of the general plan.

The site is vacant and the proposed development expands existing urban development. The analysis within this staff report demonstrates substantial conformance with General Plan policies while providing a new use of currently vacant land.

Policy 76. Provide a mix of land uses which meets the diverse needs of residents; offers a variety of employment opportunities; capitalizes, enhances, and expands upon existing physical and economic assets; and allows for the capture of regional growth.

The project provides a mix of land uses by offering a unique product, namely the first large-scale travel stop within the City limits. This project capitalizes, enhances, and expands upon existing physical and economic assets, namely existing transportation corridors (i.e., SR-99 and Taft Highway), which will contribute to the capture of regional growth.

Policy 78. Accommodate new projects which are infill or expansion of existing urban development.

The site is vacant and the development expands existing urban development.

Policy 79. Provide for an orderly outward expansion of new "urban" development (any commercial, industrial, or residential development having a density greater than one unit per acre) so that it maintains continuity of existing development, allows for the incremental expansion of infrastructure and public services, minimizes impacts on natural environmental resources, and provides a high quality environment for living and business.

The project is on vacant land and existing urban development is in the area. The project provides for the orderly outward expansion of new urban development. The project, through the site plan review process, would maintain continuity with existing and nearby development. The project allows for the incremental expansion of infrastructure and public services because infrastructure and services are available for the site or will be developed through the fair-share payment of impacts fees by the property owner. Per the attached MND, it has been determined that, with mitigation, the project would not have a significant impact on the natural environment. The site plan review process would ensure that the project provides a high quality environment for living.

ENVIRONMENTAL REVIEW AND DETERMINATION:

Staff prepared an Initial Study (IS) and concluded the proposed project would not have a significant effect on the environment. Therefore, a Mitigated Negative Declaration (MND) was subsequently prepared for this project in accordance with the California Environmental Quality Act (CEQA). See attachment "CEQA Document-MND". As part of the document preparation, technical studies were provided. See attachment "Study".

The following is a brief summary of the IS findings:

- Air Quality/Greenhouse Gas Emissions. The air quality report prepared for the project concluded that, with mitigation, construction, operational, and cumulative air and greenhouse gas emissions would not result in significant emissions impacts. Mitigation imposed on the project includes providing proof of compliance with San Joaquin Valley Air Pollution Control District control measures and rules, including the Indirect Source Rule (Rule 9510).

- Biological Resources. A biological survey was performed for the site and the survey concluded that special-status wildlife species nor their indicators (e.g., scat, tracks, burrows, dens, etc.) were present at the time of the survey. However, the survey also concluded there is a potential for special-status wildlife to occur on the in the future. With the performance of a pre-construction biological survey, compliance with the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP), and imposition of additional wildlife agency-approved measures, as outlined in the MBHCP and associated Incidental Take Permit if needed, reduce biological impacts to a level of less than significant.

- Cultural Resources. There is the potential to unearth previously unknown cultural resources and human remains at the site during ground disturbance. With mitigation, impacts to previously unknown cultural resources and human remains, if found, would be reduced to less than significant. Mitigation includes educating construction workers through a cultural resources training program and stopping all work and bringing in a specialist or the coroner if previously unknown cultural resources or human remains are unearthed to determine further steps, including avoidance, testing, excavation, and removal.

- Traffic. The analysis concluded that the project has the potential to degrade traffic to below established level-of-service thresholds and could temporarily impede emergency access. With mitigation, these impacts would be reduced to a level of less than significant. Mitigation includes paying into the Regional Transportation Impact Fee program and, if needed, obtaining a street permit or get approved a Traffic Control Plan from the City Public Works Department.

- Utilities and Service Systems. Water service is available from the Greenfield County Water District (GCWD). Prior to project development, the site would have to be annexed into the GCWD's service area. To ensure that this annexation occurs, the Planning Division requires proof of the completed annexation prior to issuance of building permits.

The project's impacts for all other environmental issue areas per CEQA Guidelines Appendix G (Environmental Checklist Form) were found to be less than significant or there would be no impact, and no mitigation would be required.

Environmental Conclusion. The State CEQA Guidelines have been followed in the evaluation of the environmental effects of this project. Significant environmental impacts were not identified with the project proposal. Therefore, the MND prepared for the project has been determined to be adequate.

PUBLIC NOTIFICATION:

In compliance with Senate Bill (SB)18, Staff mailed a letter on January 6, 2020, notifying the American Indian Tribes of the proposed project and location of the site. The notice starts the 90-day consultation period required under SB 18. As of this writing, no Tribal comments have been received.

Signs are required as part of the public notification process and must be posted between 20 to 60 days before the public hearing date. The required signs were placed on the project site on May 28, 2020 giving public notice of the June 18, 2020 meeting. Photographs of the four signs posted along the perimeter of the site were submitted to the Planning Division and are available upon request.

In addition to complying with public noticing requirements for the March 5, 2020 Planning Commission meeting, the notice of public hearing on June 18, 2020 before the Planning Commission of the City of Bakersfield for the proposed GPA/ZC and MND was again advertised in *The Bakersfield Californian* and posted on the bulletin board of the City of Bakersfield Development Services Department - Planning Division on June 8, 2020. Property owners within 300 feet of the project site were notified of the meeting(s), by United States Mail and in accordance with state law.

Comments received as part of the MND and public notification process are attached to this staff report and summarized as follows:

- Kern County Superintendent of Schools (February 14, 2020). The commenter states the project would have no significant effects on District facilities provided that statutory school facilities fees, if any, are collected as required by law.

  Response: Comment noted for the record. The MND states that impacts to schools would be reduced to less than significant through increased property tax revenues.

- Pacific Gas & Electric Plan Review Team (February 24, 2020). The commenter states that if the project is adjacent to or within PG&E-owned property, then PG&E would be working with the City to ensure compatible uses near their facilities. The letter goes on to provide stipulations related to gas and electrical facilities if a project would affect such facilities.

  Response: Comments noted for the record. The project is not adjacent to or within PG&E-owned property.

- California Department of Conservation/Geologic Energy Management Division (February 25, 2020). The commenter states that there are zero known gas wells located at the project site. The commenter also states that if previously unknown wells are discovered, the property owner is to immediately notify the Division's construction site well review engineer in the Inland district office and file for Division review an amended site plan with well casing diagrams. The District office would send a follow-up well evaluation letter to the property owner and local permitting agency.

  Response: Comments noted for the record. There is also a standard condition with all Site Plan Review projects that address the discovery of previously unknown wells during construction.

- Kern Delta Water District (February 27, 2020). The commenter states they are not opposed to the project, but concerned about road improvements along South H Street because of the project encroaching into the Kern Island Canal's easement.

  Response: The applicant revised the site plan to eliminate access to South H Street across the Kern Island Canal.

- California Department of Transportation (Caltrans) (February 28, 2020). The commenter states the ITE Trip Handbook was not used to estimate traffic volumes as travel stops are not found in the Handbook. Instead, the Traffic Impact Study (TIS) used a study of six locations, but this study was not included in the TIS and therefore trip generation could not be verified. The commenter requests access to the Synchro software electronic files. The commenter states that the peak hour traffic and intersection analysis should be adjusted to apply 88% of trips to the southbound/northbound (SB/NB) ramps at the State Route (SR) 99/SR 119 interchange. The commenter recommends accounting for the one movement that was above 3.0% annual growth rate and that a complete traffic count be provided to include ramp movements and future impact. The commenter requests verification that SR 99/SR 119 interchange improvements are included as part of the City's Fee Program. Finally, the commenter states that, per the TIS, the SR 99 off-ramp to South H Street road segment is currently experiencing longer delays and therefore, mitigation is needed.

  Response: Ruettgers & Schuler, the applicant's traffic consultant contacted Caltrans and provided the additional information requested. They also provided a response to Caltrans stating the study used to estimate traffic volumes was included in the TIS as an appendix. The traffic consultant has provided the Synchro files to both Planning Division and Caltrans. The traffic consultant states that diverted link trips were applied to off-ramps and accounted for in the project trip, distribution table, analysis, and figures, and therefore applying 88% of trips to the SB/NB ramps at the interchange is not necessary. The traffic consultant states that the annual growth rates on page 7 in the TIS were revised to between 015% to 3.13% to account for the one movement above 3.0%; this revision does not increase the intensity of traffic impacts because of the project nor does it require additional

mitigation not previously disclosed in the environmental document. Additionally, the traffic consultant states that traffic count information was included in the TIS appendix for all intersections counted. The traffic consultant states that SR 99/SR 119 interchange improvements are included as part of the City's Fee Program, and specifically as global project numbers B410 ($1,145,244) and B345 ($7,334,988) found in the Regional Traffic Impact Fee (RTIF) facilities list. Finally, the traffic consultant states that improvements to the SR 99 off-ramp to South H Street road segment to widen to the bridge/roadway to four lanes is included on the RTIF facilities list and therefore, mitigation to improve this segment is included in the required RTIF program.

On May 27, 2020, Caltrans responded stating they received the additional requested information from the traffic consultant and request two weeks from the date of the email to review the traffic consultant's response and follow up documents. As of this writing, no additional comments have been received.

PLANNING COMMISSION OPTIONS:

Based on the information presented, public testimony, and deliberations, your Commission has several options regarding this request:

- Recommend Approval. Your Commission could recommend approval as requested to City Council. Staff notes that a more restrictive land use designation or zone district could be considered; however, it would not provide the ability to develop the site as proposed with a travel stop.

- Recommend Denial. Your Commission could recommend denial to City Council for specific reasons determined and made known by the Commission.

- Continue Hearing. Your Commission may have unanswered questions and/or request additional information unavailable at the time of the hearing that is needed to make an informed decision. Therefore, your Commission could continue the hearing to a date certain to provide additional time to obtain the requested information.

- Refer Back to Staff. Your Commission may have substantial concerns that require an undetermined amount of time to resolve. In which case, it may warrant the project be referred back to staff for re-advertisement and reconsideration at a later date.

CONCLUSION:

As noted above, the project is a request to: (1) change the existing land use designation from GC (General Commercial) to LI (Light Industrial); and (2) change the zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing) on 20.55 gross acres (17.65 net acres).

Consistency with Surrounding Development. The proposed change in land use designation and zone classification are compatible with the surrounding land uses. The travel stop predominantly provides amenities typical of a regional commercial center, with the exception of the truck maintenance building. However, as noted above the maintenance is limited to providing minor services and not major repairs. Therefore, the proposed change in land use designation, and zone district from regional commercial to light manufacturing has been determined to be compatible with the surrounding land uses of existing and future City and County regional commercial, future County estate, and existing mobile homes.

Consistency with General Plan. The proposal is consistent with land use goals and policies as contained in the General Plan:

- Accommodate new development that captures the economic demands of the marketplace;
- Provide a full mix of uses to support the population;
- Complement existing land uses;
- Channel land uses in a phased and orderly manner and with available infrastructure;
- Concentrate travel services at one location adjacent to major transportation corridors;
- Develop new uses consistent with the policies of the general plan;
- Provide a mix of land uses by offering the first large-scale travel stop within City limits; and
- Provide for the orderly outward expansion of new urban development.

Consistency with Zoning Ordinance. The project proposes a light manufacturing classification for the project site that is compatible with the proposed General Plan land use designation. The proposed development as a travel stop, would also be consistent with the zoning ordinance if approved.

OVERALL RECOMMENDATION:

The project has been found to be consistent with General Plan policies and City Zoning Ordinance requirements. The proposed project is compatible with existing and planned future development within the area. For these reasons, Staff is recommending approval of GPA/ZC No. 19-0292.

ATTACHMENTS:

- Resolutions with Exhibits
- Mitigated Negative Declaration with Studies
- Correspondence Received
- Draft SPR Conditions

RESOLUTION NO. _____

RESOLUTION OF THE BAKERSFIELD PLANNING COMMISSION RECOMMENDING THAT THE CITY COUNCIL APPROVE AN AMENDMENT TO THE LAND USE MAP DESIGNATION OF THE METROPOLITAN BAKERSFIELD GENERAL PLAN, LOCATED AT THE NORTHEAST CORNER OF THE TAFT HIGHWAY/H STREET INTERSECTION (GPA/ZC NO. 19-0292).

WHEREAS, the City of Bakersfield is requesting an amendment to the land use map designation of the *Metropolitan Bakersfield General Plan* from GC (General Commercial) to LI (Light Industrial) on 20.55 gross acres (17.65 net acres) and an amendment to Title 17 of the Bakersfield Municipal Code to change the Zone District from C-2 (Regional Commercial) to M-1 (Light Manufacturing) on 20.55 gross acres (17.65 net acres) located at the northeast corner of the Taft Highway/H Street intersection (the "Project"); and

WHEREAS, adoption of a Mitigated Negative Declaration for the Project has been recommended; and

WHEREAS, the Secretary of the Planning Commission set Thursday, June 18, 2020 at 5:30 p.m. in the Council Chambers of City Hall, 1501 Truxtun Avenue, Bakersfield, California, as the time and place for a public hearing before the Planning Commission to consider the proposed Mitigated Negative Declaration and Project as required by Government Code Section 65353, and notice of the public hearing was given in the manner provided in Title 17 of the Bakersfield Municipal Code; and

WHEREAS, the facts presented in the staff report and evidence received both in writing and by verbal testimony at the above referenced public hearing support the following findings:

1. All required public notices have been given. Hearing notices regarding the proposed Project were mailed to property owners within 300 feet of the Project area and published in the *Bakersfield Californian*, a local newspaper of general circulation, 30 days prior to the hearing.

2. The provisions of CEQA, the State CEQA Guidelines, and the City of Bakersfield CEQA Implementation Procedures have been followed. Staff determined that the proposal is a project under CEQA and an initial study was completed.

3. The public necessity, general welfare, and good planning practices justify the Project.

4. The Project is compatible with the land use designations and development of surrounding properties and is internally consistent with the *Metropolitan Bakersfield General Plan.*

NOW, THEREFORE, BE IT RESOLVED by the Bakersfield Planning Commission as follows:

1. The above recitals, incorporated herein, are true and correct.

2. The Project is hereby recommended for approval by the City Council subject to the conditions of approval in Exhibit A and located on the map as shown in Exhibit B, both of which are incorporated herein.

I HEREBY CERTIFY that the foregoing Resolution was passed and adopted by the Planning Commission of the City of Bakersfield at a regular meeting thereof held on June 18, 2020, on a motion by _____ and seconded _____, by the following vote.

AYES:

NOES:

ABSENT:

APPROVED

_____
LARRY KOMAN, CHAIR
City of Bakersfield Planning Commission

Exhibits (attached):

Exhibit A: Conditions of Approval
Exhibit B: Location Map

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CONDITIONS OF APPROVAL
GENERAL PLAN AMENDMENT/ZONE CHANGE NO. 19-0292

PUBLIC WORKS

1. Prior to the City's approval of any construction plans associated with any development project, subdivision, or minor land division within the GPA area, the developer must submit the following for review and approval by the City Engineer:

    a. **Fully executed dedication** for Taft Hwy and South H Street to arterial standards for the full frontage of the GPA/ZC area, unless otherwise approved by the City Engineer, if not already dedicated. Dedications must include sufficient widths for expanded intersections and additional areas for landscaping as directed by the City Engineer. Relocate and reconstruct the existing traffic signal at NEC of Taft Hwy and South H Street including canal headwall to the ultimate locations.

    b. **Comprehensive drainage study** of the GPA/ZC area is to be submitted for approval by the City of Bakersfield Public Works Department Subdivision section. The drainage including the frontage for the GPA/ZC area, and offsite frontage is to be retained onsite and shall be privately maintained. Provide flowage and drainage easements as needed are to be provided prior to the recording of any final map or issuance of any certificates of occupancy for development within the GPA/ZC area, whichever is earlier.

    c. **Sewer study**, which will assure that appropriate sewer service will be provided to the entire GPA area. The developer will be responsible for the initial extension of the sewer line to serve the GPA area. This sewer line may be sized to serve a much larger area than the project area as directed by the City Engineer. The developer may also form a planned sewer area to provide a mechanism for the reimbursement of oversizing costs to the developer. The sewer study must provide evidence the existing sewer system will not be impacted by the increased development intensity proposed for the GPA. If the existing sewer system cannot accommodate the increased development intensity, then sewer main upsizing or additional parallel sewer mains may be required to serve the proposed GPA. A design study shall be provided to propose sewer mitigation alternatives in case of insufficient capacity of the existing system. This GPA/ZC area is within the Curnow Planned Sewer Area (Resolution 213-07). Any fees associated with the Curnow Planned Sewer Area are to be paid for the entire GPA/ZC area with the first Building Permit issued.

For orderly development

2. Prior to recording of any final map or issuance of any certificates of occupancy for development within the GPA area, whichever is earlier, the developer must (a) construct all infrastructure, both public and private, within the boundary of the GPA area, including, but not limited to, any and all boundary streets to the centerline of the street as required by the City Engineer and (b) construct, and acquire any necessary right-of-way to construct, any off-site infrastructure for Taft Hwy and South H. Street to support development of the GPA as determined by the City Engineer. Phasing of the construction of the required infrastructure

may be allowed by the City Engineer. Per City Council Resolution 035-13, any development within the GPA area must comply with the City's "complete streets" policy.

For orderly development

3. The subdivider shall construct the equivalent full width landscaped median island in Taft Hwy for the site's frontage. Turning movements along Taft Hwy shall be restricted to right turn in, right turn out, left in at the private entrance and at the intersection with LaJolla Street. A full access opening at LaJolla Street will only be considered if the developer funds and installs a traffic signal. Said signal will only be permitted if a signal synchronization study is submitted and approved, which shows progression is not adversely affected. Turning movement along South H Street to the project site shall be restricted to right turn in and right turn out only. Right turn storage lanes are required on arterials at private entrances and shall have a minimum of 90-foot taper with 150 feet storage lane per the City of Bakersfield standards. Access from South H Street to the project site must satisfy canal owner's requirements.

For orderly development

4. Install traffic signal interconnect conduit and pull rope for the frontage in all arterials and collectors.

For orderly development

5. Prior to the City's approval of any construction plans associated with any development project, subdivision, or minor land division within the GPA area, the developer must take all actions necessary to add the GPA area to the Consolidated Maintenance District ("CMD") and pay all fees for inclusion in the CMD or, if the development is already within the CMD, update the maintenance district documents as provided in Bakersfield Municipal Code section 13.04.021 or as otherwise required by the City Engineer.

For orderly development

6. Prior to the City's issuance of any building permits for construction within the GPA area, or an earlier time established through conditions of a subsequent City-approved subsequent development project, subdivision, or minor land division within the GPA area, the developer must pay all development fees for the GPA area including, but not limited to, the adopted regional traffic impact fee, any major bridge and thoroughfare district fees, and any planned sewer and drainage area fees.

CITY ATTORNEY

7. In consideration by the City of Bakersfield for land use entitlements, including but not limited to related environmental approvals related to or arising from this project, the applicant, and/or property owner and/or subdivider ("Applicant" herein) agrees to indemnify, defend, and hold harmless the City of Bakersfield, its officers, agents, employees, departments, commissioners and boards ("City" herein) against any and all liability, claims, actions, causes of action or demands whatsoever against them, or any of them, before administrative or judicial tribunals of any kind whatsoever, in any way arising from, the terms and provisions

of this application, including without limitation any CEQA approval or any related development approvals or conditions whether imposed by the City, or not, except for CITY's sole active negligence or willful misconduct.

This indemnification condition does not prevent the Applicant from challenging any decision by the City related to this project and the obligations of this condition apply regardless of whether any other permits or entitlements are issued.

The City will promptly notify Applicant of any such claim, action or proceeding, falling under this condition within thirty (30) days of actually receiving such claim. The City, in its sole discretion, shall be allowed to choose the attorney or outside law firm to defend the City at the sole cost and expense of the Applicant and the City is not obligated to use any law firm or attorney chosen by another entity or party.

PLANNING

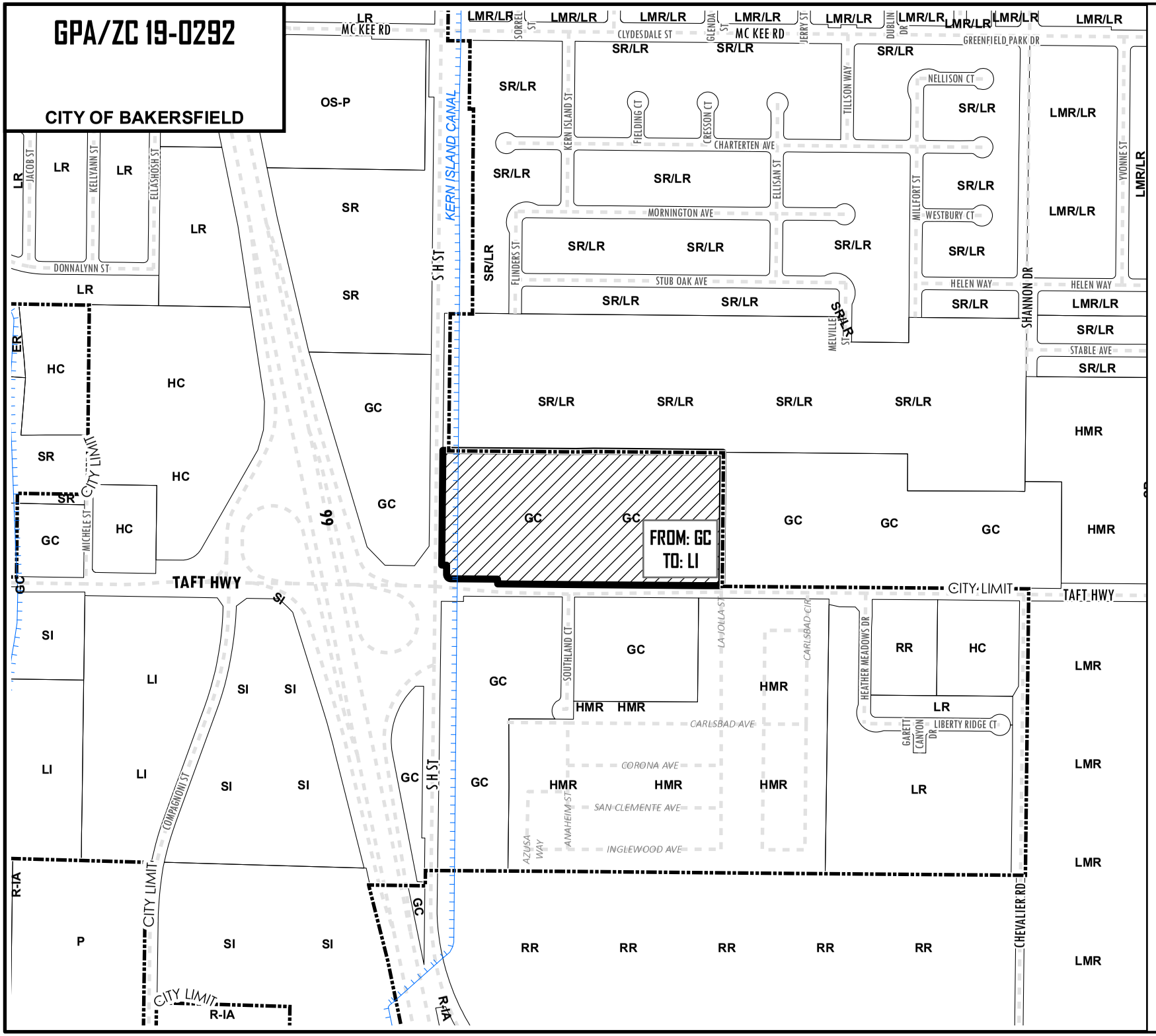
8. If the property is sold to a new landowner, the new owner shall obtain approval of future site plans from the Planning Commission prior to receiving necessary permits to develop the site.

For orderly development

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GPA/ZC 19-0292

CITY OF BAKERSFIELD



LEGEND (GENERAL PLAN LAND USE)

- RR Rural Residential
  - 2.5 gross acres/dwelling unit
- ER Estate Residential
  - 1 dwelling unit/net acre
- SR Suburban Residential
  - ≤4 dwelling units/net acre
- SR/LR
  - County: ≤ 4 dwelling units/net acre
  - City: ≤ 7.26 dwelling units/net acre
- LR Low Density Residential
  - ≤ 7.26 dwelling units/net acre
- LMR Low Medium Density Residential
  - > 4 but ≤ 10 dwelling units/net acre
- HMR High Medium Density Residential
  - >7.26 units but
  - ≤17.42 dwelling units/net acre
- HR High Density Residential
  - >17.42 units but
  - ≤72.6 dwelling units/net acre
- HC Highway Commercial
- GC General Commercial
- MC Major Commercial
- OC Office Commercial
- MUC Mixed Use Commercial
- LI Light Industrial
- SI Service Industrial
- HI Heavy Industrial
- P Public Facilities
- PS Public/Private Schools
- PT Public Transportation Corridors
- P-SW Solid Waste Facilities
- OS Open Space
- OS-P Parks and Recreation
- OS-S Slopes exceeding 30%
- R-IA Resource -
  - Intensive Agriculture
  - 20 acre minimum parcel size
- R-EA Resource -
  - Extensive Agriculture
  - 20 acre minimum parcel size
  - 80 acre min (Williamson Act)
- R-MP Resource -
  - Minerals & Petroleum
  - 5 acre minimum parcel size
- UER Urban Estate Residential
  - Western Rosedale Plan
  - 0.5 acre net minimum parcel size
- WM West Ming Specific Plan

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RESOLUTION NO. _____

RESOLUTION OF THE BAKERSFIELD PLANNING COMMISSION RECOMMENDING THAT THE CITY COUNCIL APPROVE AN AMENDMENT TO TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE TO CHANGE THE ZONE, LOCATED AT THE NORTHEAST CORNER OF THE TAFT HIGHWAY/H STREET INTERSECTION (GPA/ZC NO. 19-0292).

WHEREAS, the City of Bakersfield is requesting an amendment to the land use map designation of the *Metropolitan Bakersfield General Plan* from GC (General Commercial) to LI (Light Industrial) on 20.55 gross acres (17.65 net acres) and an amendment to Title 17 of the Bakersfield Municipal Code to change the Zone District from C-2 (Regional Commercial) to M-1 (Light Manufacturing) on 20.55 gross acres (17.65 net acres) located at the northeast corner of the Taft Highway/H Street intersection (the "Project"); and

WHEREAS, adoption of a Mitigated Negative Declaration for the Project has been recommended; and

WHEREAS, the Secretary of the Planning Commission set Thursday, June 18, 2020 at 5:30 p.m. in the Council Chambers of City Hall, 1501 Truxtun Avenue, Bakersfield, California, as the time and place for a public hearing before the Planning Commission to consider the proposed Mitigated Negative Declaration and Project as required by Government Code Section 65353, and notice of the public hearing was given in the manner provided in Title 17 of the Bakersfield Municipal Code; and

WHEREAS, the facts presented in the staff report and evidence received both in writing and by verbal testimony at the above referenced public hearing support the following findings:

1. All required public notices have been given. Hearing notices regarding the Project were mailed to property owners within 300 feet of the Project area and published in the *Bakersfield Californian*, a local newspaper of general circulation, 30 days prior to the hearing.

2. The provisions of CEQA, the State CEQA Guidelines, and the City of Bakersfield CEQA Implementation Procedures have been followed. Staff determined that the proposal is a project under CEQA and an initial study was completed.

3. The public necessity, general welfare, and good planning practices justify the Project.

4. The Project is compatible with the zone districts and development of surrounding properties, and is consistent with the *Metropolitan Bakersfield General Plan.*

NOW, THEREFORE, BE IT RESOLVED by the Bakersfield Planning Commission as follows:

1. The above recitals, incorporated herein, are true and correct.

2. The Project is hereby recommended for approval by the City Council, incorporating the change into the official zoning map as described in Bakersfield Municipal Code Section 17.06.020 located on the map as shown in Exhibit A and as specifically described in Exhibit B, all of which are incorporated herein.

I HEREBY CERTIFY that the foregoing Resolution was passed and adopted by the Planning Commission of the City of Bakersfield at a regular meeting thereof held on June 18, 2020, on a motion by Commissioner _____ and seconded by Commissioner_____, by the following vote.

AYES:

NOES:

ABSENT:

APPROVED

_____
LARRY KOMAN, CHAIR
City of Bakersfield Planning Commission

Exhibits (attached):

Exhibit A: Legal Description
Exhibit B: Zone Change Map

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EXHIBIT 'A'

Lane Engineers, Inc. Job No. 19012
July 30, 2019

Parcel 1 (APN 517-030-06)
The "Designated Remainder" shown as a portion of Parcel Map 9570, in the unincorporated area, County of Kern, State of California, as per map recorded October 16, 1992 in Book 44, Page 127 of Parcel Maps, in the Office of the County Recorder of said County.

Parcel 2 (APN 517-030-08)
Parcel 1 of Lot Line Adjustment No. 139-90, as per that certain Certificate of Compliance recorded April 25, 1991 in Book 6514, Page 1025, File No. 051679, Official Records, in the unincorporated area, County of Kern, State of California, also described as:

The south 660.00 feet of the west 660.00 feet of Parcel 2 of Parcel Map No. 6837, in the unincorporated area, County of Kern, State of California, recorded April 17, 1984 in Book 30, Page 158 of Parcel Maps, in the Office of the County Recorder of said County.

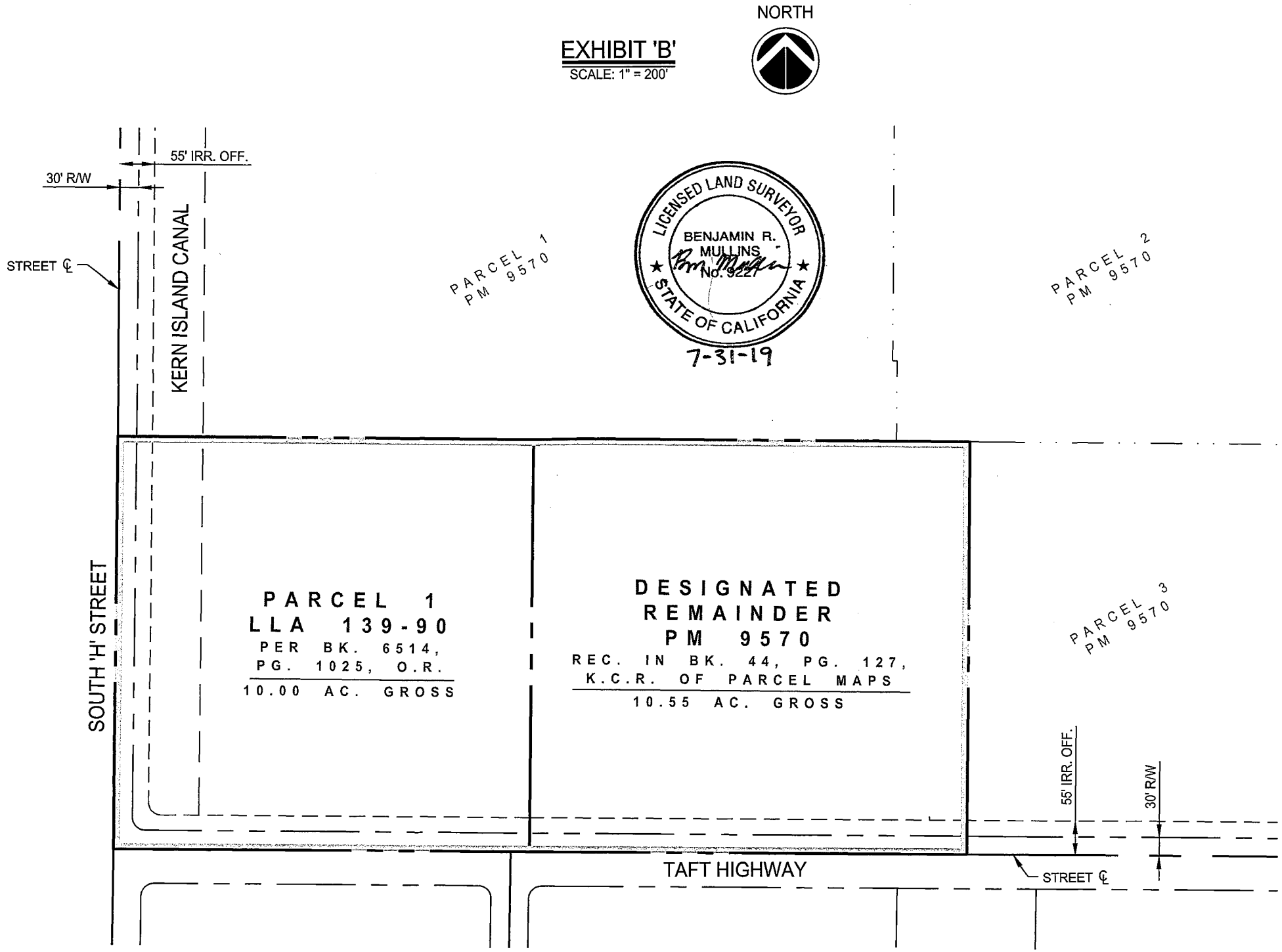
CONTAINING 894,993 square feet or 20.55 acres, more or less.

SEE EXHIBIT 'B' ATTACHED HERETO.



EXHIBIT 'B'

SCALE: 1" = 200'

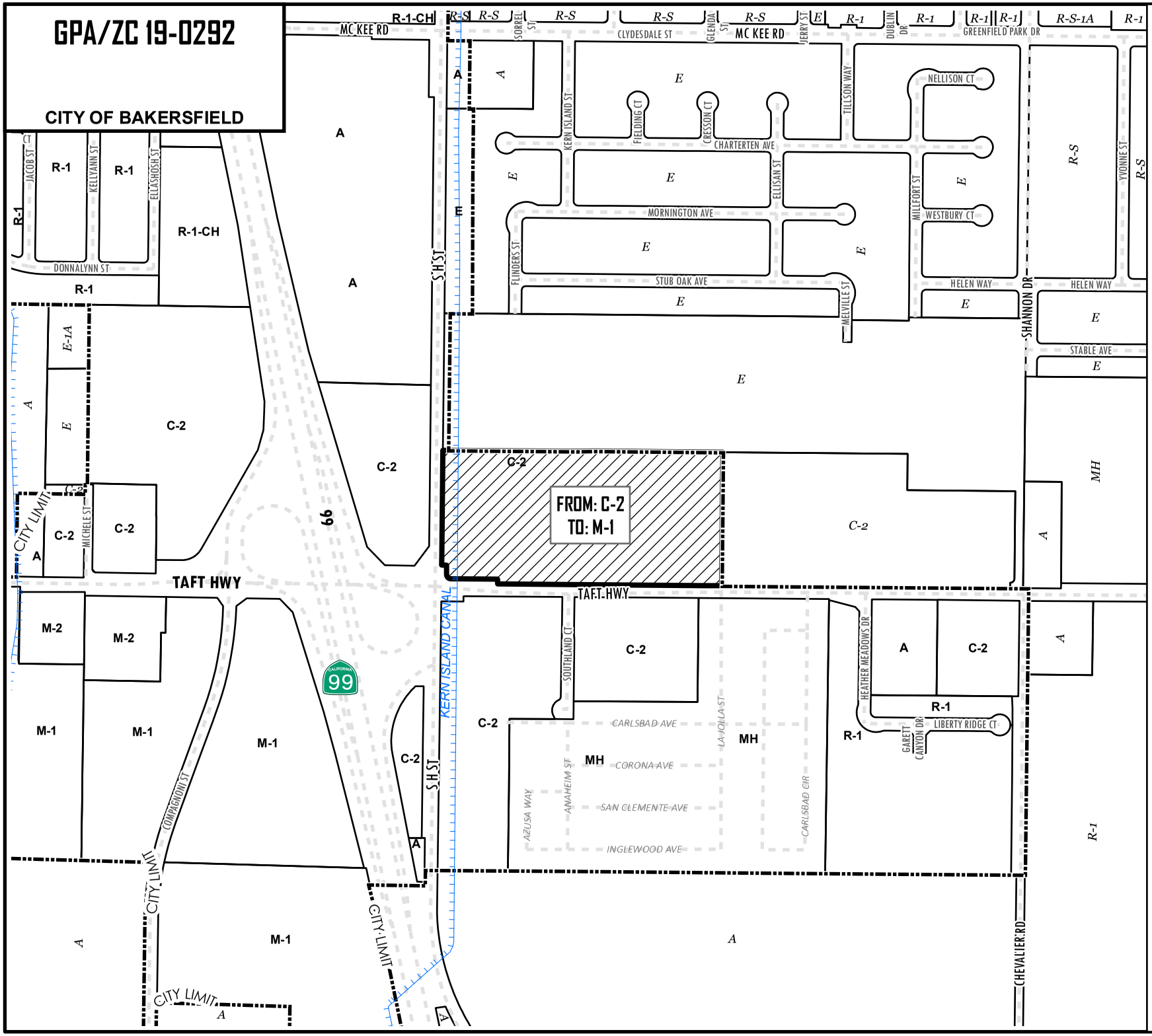


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JOB NO. 19012
2 OF 2

GPA/ZC 19-0292

CITY OF BAKERSFIELD



LEGEND (ZONE DISTRICTS)

- R-1 One Family Dwelling
  - 6,000 sq.ft. min lot size
- R-1-4.5 One Family Dwelling
  - 4,500 sq.ft. min lot size
- E Estate
  - 10,000 sq.ft. min lot size
- R-S Residential Suburban
  - 24,000 sq.ft./dwelling unit
- R-S-( ) Residential Suburban
  - 1, 2.5, 5 or 10 min lot size
- R-2 Limited Multiple Family Dwelling
  - 4,500 sq.ft. min lot size (single family)
  - 6,000 sq.ft. min lot size (multifamily)
  - 2,500 sq.ft. lot area/dwelling unit
- R-3 Multiple Family Dwelling
  - 6,000 sq.ft. min lot size
  - 1,250 sq.ft. lot area/dwelling unit
- R-4 High Density Multiple Family Dwelling
  - 6,000 sq.ft. min lot size
  - 600 sq.ft. lot area/dwelling unit
- R-H Residential Holding
  - 20 acre min lot size
- A Agriculture
  - 6,000 sq.ft. min lot size
- A-20A Agriculture
  - 20 acre min lot size
- PUD Planned Unit Development
- TT Travel Trailer Park
- MH Mobilehome
- C-O Professional and Administrative Office
- C-1 Neighborhood Commercial
- C-2 Regional Commercial
- C-C Commercial Center
- C-B Central Business
- PCD Planned Commercial Development
- M-1 Light Manufacturing
- M-2 General Manufacturing
- M-3 Heavy Industrial
- P Automobile Parking
- RE Recreation
- Ch Church Overlay
- OS Open Space
- HOSP Hospital Overlay
- AD Architectural Design Overlay
- FP-P Floodplain Primary
- FP-S Floodplain Secondary
- AA Airport Approach
- DI Drilling Island
- PE Petroleum Extraction Combining
- SC Senior Citizen Overlay
- HD Hillside Development Combining
- WM- West Ming Specific Plan

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Document Name: 20190906_GPAs

RESOLUTION NO. _____

RESOLUTION OF THE BAKERSFIELD PLANNING COMMISSION RECOMMENDING THAT THE CITY COUNCIL ADOPT A MITGATED NEGATIVE DECLARATION FOR AN AMENDMENT TO THE LAND USE MAP AND ZONE CHANGE, LOCATED AT THE NORTHEAST CORNER OF THE TAFT HIGHWAY/H STREET INTERSECTION (GPA/ZC NO. 19-0292).

WHEREAS, the City of Bakersfield is requesting an amendment to the land use map designation of the *Metropolitan Bakersfield General Plan* from GC (General Commercial) to LI (Light Industrial) on 20.55 gross acres (17.65 net acres) and an amendment to Title 17 of the Bakersfield Municipal Code to change the Zone District from C-2 (Regional Commercial) to M-1 (Light Manufacturing) on 20.55 gross acres (17.65 net acres) located at the northeast corner of the Taft Highway/H Street intersection (the "Project"); and

WHEREAS, it was determined that the Project would not have a significant effect on the environment; therefore, a Mitigated Negative Declaration was prepared in accordance with the California Environmental Quality Act (CEQA); and

WHEREAS, the Secretary of the Planning Commission set Thursday, June 18, 2020 at 5:30 p.m. in the Council Chambers of City Hall, 1501 Truxtun Avenue, Bakersfield, California, as the time and place for a public hearing before the Planning Commission to consider the proposed Notice of Exemption and Project as required by Government Code Section 65353, and notice of the public hearing was given in the manner provided in Title 17 of the Bakersfield Municipal Code; and

WHEREAS, the laws and regulations relating to the preparation and adoption of Notice of Exemptions as set forth in CEQA, the State CEQA Guidelines, and the City of Bakersfield CEQA Implementation Procedures have been duly followed by City staff and the Planning Commission; and

WHEREAS, the City of Bakersfield Development Services Department (1715 Chester Avenue, Bakersfield, California) is the custodian of all documents and other materials upon which the environmental determination is based; and

WHEREAS, the facts presented in the staff report and evidence received both in writing and by verbal testimony at the above referenced public hearing support the following findings:

1. All required public notices have been given. Hearing notices regarding the Project were mailed to property owners within 300 feet of the Project area and published in the *Bakersfield Californian*, a local newspaper of general circulation, 30 days prior to the hearing.

2. The provisions of CEQA, the State CEQA Guidelines, and the City of Bakersfield CEQA Implementation Procedures have been followed. Staff determined that the proposal is a project under CEQA. A Notice of Exemption was prepared and properly noticed for public review.

3. A Mitigated Negative Declaration for the Project is the appropriate environmental document to accompany its approval as the Project will not significantly impact the physical environment.

NOW, THEREFORE, BE IT RESOLVED by the Bakersfield Planning Commission as follows:

1. The above recitals, incorporated herein, are true and correct.

2. The Mitigated Negative Declaration is hereby recommended for adoption by the City Council.

3. The project is subject to mitigation measures found in Exhibit A for the Project located on the map as shown in Exhibit B, both of which are incorporated herein.

I HEREBY CERTIFY that the foregoing Resolution was passed and adopted by the Planning Commission of the City of Bakersfield at a regular meeting thereof held on June 18, 2020, on a motion by _____ and seconded by_____, by the following vote:

AYES:

NOES:

ABSENT:

APPROVED

_____
LARRY KOMAN, CHAIR
City of Bakersfield Planning Commission

Exhibits (attached):

Exhibit A: Mitigation Measures
Exhibit B: Location Map

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MITIGATION MEASURES FROM MITIGATED NEGATIVE DECLARATION
GENERAL PLAN AMENDMENT/ZONE CHANGE NO. 19-0292

Air Quality Impact Mitigation Measures:

1. Prior to grading plan approval, the applicant/developer shall submit documentation to the Planning Division that they will/have met all air quality control measures and rules required by the San Joaquin Valley Air Pollution Control District.

2. Prior to grading plan approval, the applicant/developer shall submit proof to the Planning Division that they have complied with the San Joaquin Valley Air Pollution Control District's Indirect Source Rule (Rule 9510).

Biological Resources Impact Mitigation Measures:

3. Prior to ground disturbance, the applicant/developer shall have a California Department of Fish and Wildlife (CDFW) approved wildlife biologist ("qualified biologist") survey the location for species (i.e., Tipton kangaroo rat, San Joaquin kit fox, San Joaquin antelope squirrel, and Bakersfield cactus) covered under the Metropolitan Bakersfield Habitat Conservation Plan incidental take permit for urban development and comply with the mitigation measures of the permit. Survey protocol shall be that recommended by CDFW. The applicant/developer shall be subject to additional mitigation measures recommended by the qualified biologist. A copy of the survey shall be provided to the Planning Division and wildlife agencies no more than 30 days prior to ground disturbance.

4. Prior to ground disturbance, a focused survey for burrowing owl shall be submitted to California Department of Fish and Wildlife (CDFW) and Planning Division by the applicant/developer. The survey shall follow the methodology developed by the California Burrowing Owl Consortium (CBOC 1993).

   If the survey results the presence of burrowing owl nests, prior to grading (including staging, clearing, and grubbing), surveys for active nests shall be conducted by a qualified wildlife biologist no more than 30 days prior to the start of any ground disturbance and in a sufficient area around the work site to identify any nests that are present and to determine their status. A sufficient area means any nest within an area that could potentially be affected directly and/or indirectly by the project. In addition to direct impacts, such as nest destruction, nests might be affected by noise, vibration, odors, and movement of workers or equipment. If the Project applicant identifies active nests, CDFW shall be notified and recommended protocols for mitigation shall be followed, and a copy of the mitigation protocols shall be submitted to Planning Division.

   If any ground disturbing activities occur during the burrowing owl nesting season (approximately February 1 through August 31), and potential burrowing owl burrows are present within the project footprint, avoidance measures shall be implemented. In the event that burrowing owls are found, the applicant/developer shall follow CDFW protocol for mitigation and comply with the provisions of the Migratory Bird Treaty Act.

Cultural Resources Impact Mitigation Measures:

5. Prior to construction and as needed throughout the construction period, a construction worker cultural awareness training program shall be provided to all new construction workers within one week of employment at the project site. The training shall be prepared and conducted by a qualified cultural resources specialist.

6. During construction, if buried cultural or paleontological resources are encountered during construction or ground disturbance activities, all work within 50 feet of the find shall immediately cease and the area cordoned off until a qualified cultural and/or paleontological resource specialist that meets the Secretary of the Interior's Professional Qualification Standards can evaluate the find and make recommendations. If the specialist determines that the discovery represents a potentially significant resource, additional investigations may be required. These additional studies may include avoidance, testing, and excavation. All reports, correspondence, and determinations regarding the discovery shall be submitted to the California Historical Resources Information System's Southern San Joaquin Valley Information Center at California State University Bakersfield..

7. During construction, if human remains are discovered, further ground disturbance shall be prohibited pursuant to California Health and Safety Code Section 7050.5. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, Public Resources Code 5097.97, and Senate Bill 447 shall be followed. In the event of the discovery of human remains, at the direction of the county coroner, Health and Safety Code Section 7050.5(c) shall guide Native American consultation.

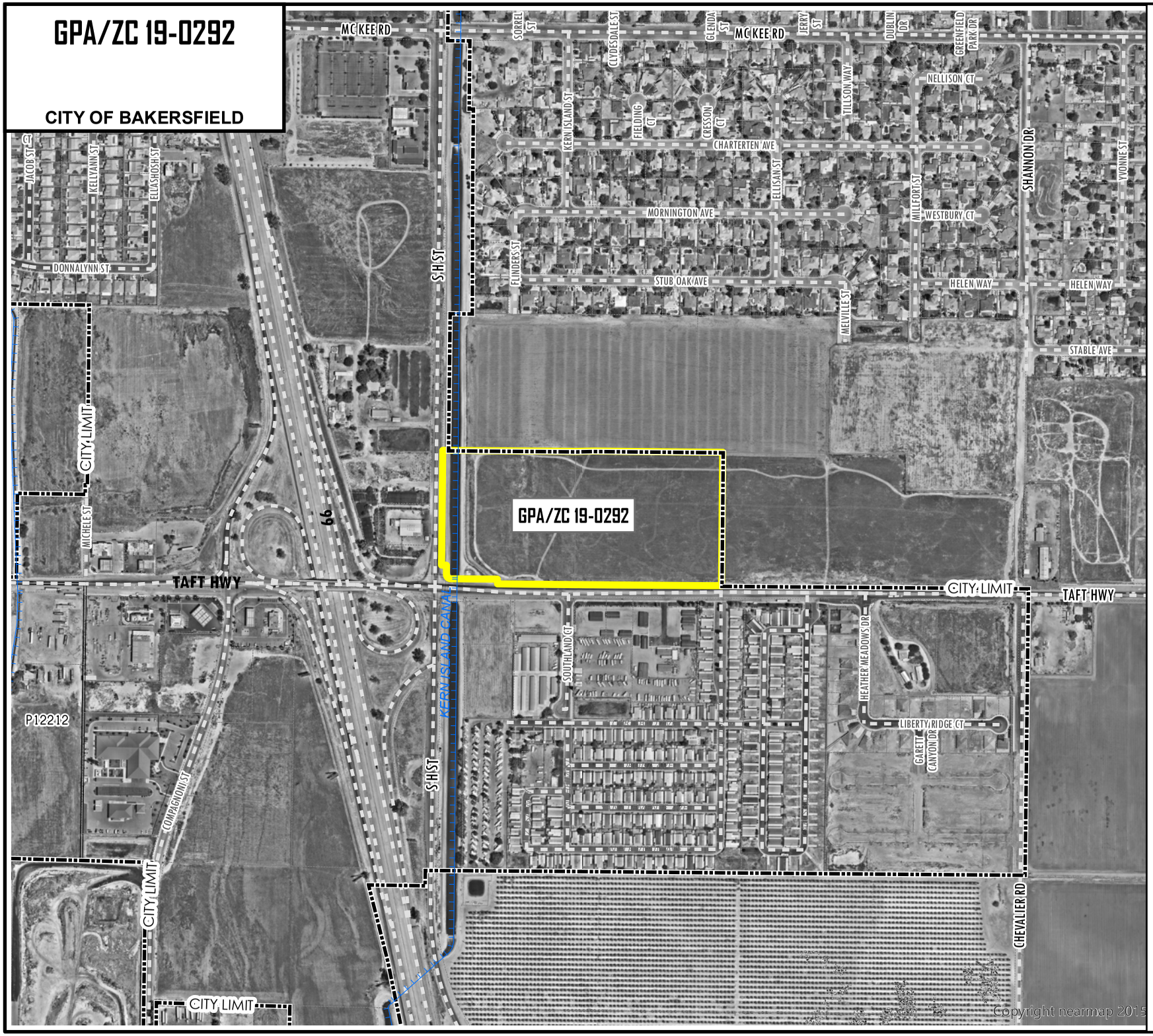
Traffic Impact Mitigation Measures:

8. Prior to issuance of building permits, the applicant/developer shall provide proof to the Planning Division of the project's participation in the Regional Transportation Impact Fee Program.

9. Prior to issuance of building permits and if necessary, the applicant/developer shall obtain a street permit or get approved a Traffic Control Plan from the City Public Works Department.

GPA/ZC 19-0292

CITY OF BAKERSFIELD



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BAKERSFIELD

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Document Name: 20190906_GPAs

NEGATIVE DECLARATION

The City of Bakersfield Development Services Department has completed an initial study (attached) of the possible environmental effects of the following-described project and has determined that a Negative Declaration is appropriate. It has been found that the proposed project, as described and proposed to be mitigated (if required), will not have a significant effect on the environment. This determination has been made according to the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and the City of Bakersfield's CEQA Implementation Procedures.

PROJECT NO. (or Title): General Plan Amendment/Zone Change No. 19-0292

COMMENT PERIOD BEGINS: February 4, 2020

COMMENT PERIOD ENDS: March 5, 2020

MITIGATION MEASURES (*included in the proposed project to avoid potentially significant effects, if required)*:

Air Quality Impact Mitigation Measures:

1. Prior to grading plan approval, the applicant/developer shall submit documentation to the Planning Division that they will/have met all air quality control measures and rules required by the San Joaquin Valley Air Pollution Control District.

2. Prior to grading plan approval, the applicant/developer shall submit proof to the Planning Division that they have complied with the San Joaquin Valley Air Pollution Control District's Indirect Source Rule (Rule 9510).

Biological Resources Impact Mitigation Measures:

3. Prior to ground disturbance, the applicant/developer shall have a California Department of Fish and Wildlife (CDFW) approved wildlife biologist ("qualified biologist") survey the location for species (i.e., Tipton kangaroo rat, San Joaquin kit fox, San Joaquin antelope squirrel, and Bakersfield cactus) covered under the Metropolitan Bakersfield Habitat Conservation Plan incidental take permit for urban development and comply with the mitigation measures of the permit. Survey protocol shall be that recommended by CDFW. The applicant/developer shall be subject to additional mitigation measures recommended by the qualified biologist. A copy of the survey shall be provided to the Planning Division and wildlife agencies no more than 30 days prior to ground disturbance.

4. Prior to ground disturbance, a focused survey for burrowing owl shall be submitted to California Department of Fish and Wildlife (CDFW) and Planning Division by the applicant/developer. The survey shall follow the methodology developed by the California Burrowing Owl Consortium (CBOC 1993).

   If the survey results the presence of burrowing owl nests, prior to grading (including staging, clearing, and grubbing), surveys for active nests shall be conducted by a qualified wildlife biologist no more than 30 days prior to the start of any ground disturbance and in a sufficient area around the work site to identify any nests that are present and to determine their status. A sufficient area means any nest within an area that could potentially be affected directly and/or indirectly by the project. In addition to direct

impacts, such as nest destruction, nests might be affected by noise, vibration, odors, and movement of workers or equipment. If the Project applicant identifies active nests, CDFW shall be notified and recommended protocols for mitigation shall be followed, and a copy of the mitigation protocols shall be submitted to Planning Division.

If any ground disturbing activities occur during the burrowing owl nesting season (approximately February 1 through August 31), and potential burrowing owl burrows are present within the project footprint, avoidance measures shall be implemented. In the event that burrowing owls are found, the applicant/developer shall follow CDFW protocol for mitigation and comply with the provisions of the Migratory Bird Treaty Act.

Cultural Resources Impact Mitigation Measures:

5. Prior to construction and as needed throughout the construction period, a construction worker cultural awareness training program shall be provided to all new construction workers within one week of employment at the project site. The training shall be prepared and conducted by a qualified cultural resources specialist.

6. During construction, if buried cultural or paleontological resources are encountered during construction or ground disturbance activities, all work within 50 feet of the find shall immediately cease and the area cordoned off until a qualified cultural and/or paleontological resource specialist that meets the Secretary of the Interior's Professional Qualification Standards can evaluate the find and make recommendations. If the specialist determines that the discovery represents a potentially significant resource, additional investigations may be required. These additional studies may include avoidance, testing, and excavation. All reports, correspondence, and determinations regarding the discovery shall be submitted to the California Historical Resources Information System's Southern San Joaquin Valley Information Center at California State University Bakersfield.

7. During construction, if human remains are discovered, further ground disturbance shall be prohibited pursuant to California Health and Safety Code Section 7050.5. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, Public Resources Code 5097.97, and Senate Bill 447 shall be followed. In the event of the discovery of human remains, at the direction of the county coroner, Health and Safety Code Section 7050.5(c) shall guide Native American consultation.

Traffic Impact Mitigation Measures:

8. Prior to issuance of building permits, the applicant/developer shall provide proof to the Planning Division of the project's participation in the Regional Transportation Impact Fee Program.

9. Prior to issuance of building permits and if necessary, the applicant/developer shall obtain a street permit or get approved a Traffic Control Plan from the City Public Works Department.

Utilities and Service Systems Mitigation Measures:

10. Prior to the issuance of building permits, the applicant/developer shall provide proof to the Planning Division of annexation into the Greenfield County Water District service area.

INITIAL STUDY
ENVIRONMENTAL ANALYSIS

1. **Project Title:** General Plan Amendment/Zone Change No. 19-0292

2. **Lead Agency** *(name and address)*: City of Bakersfield
Development Services Department
1715 Chester Avenue
Bakersfield, California 93301

3. **Contact Person and Phone Number:** Steve Esselman, Principal Planner
(661) 326-3733

4. **Project Location:** Northeast corner of Taft Highway and H Street; APN #s: 517-030-06 and 517-030-08

5. **Project Sponsor's Name and Address:** Lane Engineers, Inc.
Attn: Aaron Oliver
PO Box 1059
Tulare, CA 93275

6. **General Plan Designation:** GC (General Commercial)

7. **Zoning:** C-2 (Regional Commercial)

8. **Description of Project** *(Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation.)*:

Lane Engineers, Inc., representing Elmer F. Karpe, Inc. (property owner), is proposing a General Plan Amendment/Zone Change (GPA/ZC) on 20.55 gross acres (17.65 net acres) located at the northeast corner of Taft Highway and H Street in Bakersfield, California (APN #s: 517-030-06 and 517-030-08). The request includes: (1) an amendment of the Land Use Element of the *Metropolitan Bakersfield General Plan* land use designation from GC (General Commercial) to LI (Light Industrial), or a more restrictive designation, and (2) a change in zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing), or a more restrictive district.

The project proposes the development of a travel stop consisting of multiple uses including: fueling stations, an 11,169 square foot convenience store, a 3,485 square foot fast-food restaurant with drive-thru, and a 10,993 square foot on-site maintenance building. A total of 24 fueling positions are proposed including 16 auto fueling positions and eight truck fueling positions. The on-site maintenance building would provide light service to over the road trucks, including repairing and replacing truck tires, and light maintenance (e.g. air filters, wiper blades, oil and other fluid changes). No major engine repairs or other major mechanical services would be performed on site.

The primary activities that would take place on site would be travelers (auto and truck) stopping to fuel, rest, and/or eat. The proposed travel stop would be open and operational 24/7. The vast majority of trucks anticipated to visit the site are considered "over-the-road" trucks, which include professional drivers who drive long haul for consecutive days or weeks at a time.

Access to the project site is proposed from South H Street on the west side, from State Route 119 (Taft Highway) from the south, and from La Jolla Street on the east side of the project site. The project proposes to extend La Jolla Street north of Taft Highway, and to create a signalized intersection. Water service is available from the Greenfield County Water District.

9. Surrounding Land Uses and Setting *(Briefly describe the project's surroundings.)***:**

The project site consists of two vacant parcels of land. To the west of, and adjacent to, the site is the Kern Island Canal. The project site is approximately 500 feet east of the on-ramp from Taft Highway to the CA-99 freeway. West of the project site across CA-99 are a series of gas stations and fast food restaurants, as well as California Highway Patrol offices. The project site is primarily surrounded by vacant land to the north and east followed by existing single-family residential land uses. Across Taft Highway to the south are an RV and mini storage facility, and a mobile home park.

10. Other public agencies whose approval is anticipated to be required *(e.g., permits, financing approval, or participation agreement)***:**

- City of Bakersfield—Mitigated Negative Declaration consideration and adoption
- City of Bakersfield—Building permits
- City of Bakersfield—Site Plan Review
- City of Bakersfield—Metropolitan Bakersfield Habitat Conservation Plan compliance
- City of Bakersfield—Regional Transportation Impact Fee Program compliance
- San Joaquin Valley Air Pollution Control District—Indirect Source Rule compliance
- Kern Delta Water District—Access over Kern Island Canal
- Department of Transportation—Access from State Route 119 (Taft Highway)
- Greenfield County Water District—Annexation for water services
- Kern County Public Works—Improvement Plans for La Jolla Road
- State Water Resources Control Board—National Pollutant Discharge Elimination System General Permit

- **ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

As indicated by the checklist on the following pages, the project would result in potentially significant impacts with respect to the environmental factors checked below (*Impacts reduced to a less than significant level through the incorporation of mitigation are not considered potentially significant.*):

☐ Aesthetics	☐ Agriculture/Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

ENVIRONMENTAL DETERMINATION:

On the basis of this initial evaluation:

☐ I find that the proposed project **could** not have a significant effect on the environment, and a **negative declaration** will be prepared.

■ I find that although the proposed project **could** have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **mitigated negative declaration** will be prepared.

☐ I find that the proposed project **may** have a significant effect on the environment, and an **environmental impact report** is required.

☐ I find that the proposed project **may** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect has been (1) adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An **environmental impact report** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project **could** have a significant effect on the environment, because all potentially significant effects have been (1) analyzed adequately in an earlier **environmental impact report or negative declaration** pursuant to applicable legal standards, and (2) avoided or mitigated pursuant to that earlier **environmental impact report or negative declaration**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

02/04/2020
Date

Steve Esselman, Principal Planner
Printed name

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significant.

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS: Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway?	☐	☐	■	☐
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	■	☐
II. AGRICULTURE RESOURCES:				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	■
III. AIR QUALITY:				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	■	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	■	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	■	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	■	☐	☐

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the project:				
a) 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?	☐	■	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	■
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	■
d) 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?	☐	■	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	■	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	■	☐	☐
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	■	☐	☐
VI. ENERGY: Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	■	☐
VII. GEOLOGY AND SOILS: Would the project;				
a) Directly or indirectly cause 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.	☐	☐	☐	■
ii. Strong seismic ground shaking?	☐	☐	■	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
iv. Landslides?	☐	☐	☐	■
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
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?	☐	☐	■	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No 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?	☐	☐	☐	■
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐
VIII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐
IX. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	■
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	■
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	■	☐
X. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in a substantial erosion or siltation on- or off-site?	☐	☐	■	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	■	☐
iii. 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?	☐	☐	■	☐
iv. Impede or redirect flood flows?	☐	☐	☐	■
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	■	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐
XI. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	■

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	■
XII. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	☐	☐	☐	■
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	■
XIII. NOISE: Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■
XIV. POPULATION AND HOUSING: Would the project;				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	■	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■
XV. PUBLIC SERVICES:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	■	☐
ii. Police protection?	☐	☐	■	☐
iii. Schools?	☐	☐	☐	■
iv. Parks?	☐	☐	☐	■
v. Other public facilities?	☐	☐	■	☐
XVI. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	■
XVII. TRANSPORTATION: Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	■	☐	☐

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☐	■
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
d) Result in inadequate emergency access?	☐	■	☐	☐
XVIII. TRIBAL CULTURAL RESOURCES:				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	☐	☐	☐	■
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☐	☐	■
XVIV. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	■	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	■	☐	☐
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	■	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	■	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	■	☐
XX. WILDFIRES: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	■	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	■	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	■	☐
XXI. MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the project have 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major	☐	■	☐	☐

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
periods of California history or prehistory?				
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	■	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	■	☐	☐

EVALUATION OF ENVIRONMENTAL EFFECTS

I. AESTHETICS

a. **Less-than-significant impact.** Public Resources Code (PRC) Section 21099 applicable to aesthetics effects states:

> (d)(1) Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment.
>
> (2)(A) This subdivision does not affect, change, or modify the authority of a lead agency to consider aesthetic impacts pursuant to local design review ordinances or other discretionary powers provided by other laws or policies.
>
> (B) For the purposes of this subdivision, aesthetic impacts do not include impacts on historical or cultural resources.

Mandatory insignificance determinations per PRC Section 21099 are not applicable to this project because the project is not a residential, mixed-use residential, or employment center project on an infill site within a transit priority area.

The existing visual environment in the area surrounding the project is predominantly vacant lots, highway commercial uses such as gas stations, and residential including mobile homes and single-family homes. The project does not conflict with any applicable vista protection standards, scenic resource protection requirements or design criteria of federal, state, or local agencies. The project has been designed to be consistent with the proposed *Metropolitan Bakersfield General Plan* (MBGP) designations (LI) and zone district (M-1) per the Zoning Ordinance for the project area. The project site is located within an area having slopes from 0 to 5%. The area is not regarded or designated within the MBGP as visually important or "scenic." The southeast and northwest corners of the Taft Highway and South H Street intersection are zoned for commercial development, and the area on the western side of CA-99 is predominately designated as commercial and light industrial. The construction of a travel stop at the site would be in character and compatible with existing land uses in the vicinity of the site and is a natural extension of the urban growth occurring in the project area. Therefore, the project would not have a substantial adverse effect on a scenic vista, and impacts are less than significant.

b. **Less-than-significant impact.** Based on a field visit, it was determined that there are no trees, rock outcrops, or buildings (historic or otherwise) located at the project site. The project site consists of vacant land covered with non-native grasses. Additionally, the

project is not located adjacent to or near any officially designated or potentially eligible scenic highways to be listed on the California Department of Transportation (Caltrans) State Scenic Highway System (Caltrans 2019). The closest section of highway eligible for state scenic highway designation is State Route (SR) 14 (Caltrans 2019) located in Kern County over 60 miles to the east. Therefore, the project would not substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway.

c. **Less-than-significant impact.** The project is within the Bakersfield City limits, is contiguous with existing and developing residential and commercial land uses, and is located within an urban environment. The project has been designed in accordance with the City of Bakersfield Municipal Code Title 17 (zoning ordinance). The project will also be required to undergo Site Plan Review to ensure compliance with the City's development design standards. Therefore, impacts are less than significant.

d. **Less-than-significant impact.** This project would have to comply with City development standards, including Title 17 (zoning ordinance), Title 15 (buildings and construction), as well as California Code of Regulations Title 24 (building code). Together, these local and state requirements oblige project compliance with current lighting standards that minimize unwanted light or glare to spill over into neighboring properties. Therefore, the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

II. AGRICULTURE RESOURCES

a. **No impact.** The Farmland Mapping and Monitoring Program (DOC 2019) designates the project site as Grazing Land. The site is not being farmed or grazed, and the site is bordered by major streets and development, including being adjacent to Taft Highway. The project does not convert 100 acres or more of the farmlands designated Prime, Unique, or of Statewide Importance to nonagricultural uses. Therefore, the project would not significantly convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use.

b. **No impact.** The project site is currently zoned C-2 (Regional Commercial), and is not under a Williamson Act contract. Therefore, the project would not conflict with existing zoning for agricultural use or a Williamson Act contract.

c. **No impact.** As discussed in II.b., the project site is zoned C-2 for commercial uses, and proposes a zone change to M-1. There are no forested lands located on the site. Therefore, the project would not conflict with existing zoning for, or cause rezoning of forest land or timberland, or timberland zoned Timberland Production.

d. **No impact.** Please refer to response II.c. The project would not result in the loss of forestland or conversion of forest land to non-forest.

e. **No impact.** Please refer to responses II.a through II.d. This project is in an area designated for urban uses by the MBGP. The project itself is typical of the development found in metropolitan Bakersfield. The project site is also completely surrounded by existing and developing residential and commercial land uses. Therefore, the project would not involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

III. AIR QUALITY

a. **Less-than-significant with mitigation incorporated.** The project is located within the San Joaquin Valley Air Pollution Control District (SJVAPCD) jurisdiction, in the San Joaquin Valley Air Basin (SJVAB). The SJVAB is classified by the state as being in severe nonattainment for the state 1-hour ozone standard as well as in nonattainment for the state particulate matter less than 10 microns (PM10) and particulate matter less than 2.5 microns (PM2.5). The SJVAB is also classified as in extreme nonattainment for the federal 8-hour ozone standard, nonattainment for the federal PM2.5 standard, and attainment/maintenance for the federal carbon monoxide (CO) and PM10 standards.

Emission sources because of the project would include ground disturbance and other construction-related work as well as operational emissions associated with the travel stop activities including travelers (automobile and truck) and drive-by motorists stopping to fuel, rest, and/or eat.

The SJVAPCD encourages local jurisdictions to design all developments in ways that reduce air pollution from vehicles, which is the largest single category of air pollution in the San Joaquin Valley. The *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015) lists various land uses and design strategies that reduce air quality impacts of new development. Local ordinance and general plan requirements related to landscaping, sidewalks, street improvements, level of traffic service, energy efficient heating and cooling building code requirements, and location of commercial and light industrial development in proximity to residential development are consistent with these listed strategies. Regulation and policy that will result in the compliance with air quality strategies for new residential and commercial developments include, but are not limited to, Title 24 efficiency standards, Title 20 appliance energy efficiency standards, 2005 building energy efficiency standards, Assembly Bill (AB) 1493 motor vehicle standards, and compliance with the Metropolitan Bakersfield General Plan Air Quality Conservation Element as well as the SJVAPCD air quality guidelines and rules.

As shown in the following table, the SJVAPCD has established specific criteria pollutants thresholds of significance for the operation of specific projects.

SJVAPCD Significance Thresholds for Criteria Pollutants	
Air Pollutant	**Tons/Year**
CO	100
Reactive Organic Gas (ROG)	10
Nitrogen Oxides (NOX)	10
Sulfur Oxides (SOX)	27
PM10	15
PM2.5	15

Source: Mitchell 2019.

Construction of the project would result in air pollutant emissions. Emissions from construction would result from fuel combustion and exhaust from equipment as well as vehicle traffic, grading, and the use of toxic materials (e.g., lubricants). The following table provides estimated construction emissions because of the project.

Construction Emissions						
Construction Year	**Pollutant (tons/year)**					
	ROG	**NOX**	**CO**	**SOX**	**PM10**	**PM2.5**
Year 2021 Emissions	0.74	4.53	3.84	0.0	0.01	0.66
SJVAPCD Threshold	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Mitchell 2019.

As shown in the above table, construction emissions are not predicted to exceed SJVAPCD significance thresholds levels. Therefore, impacts are less than significant.

Project operations would also result in air pollutant emissions. Vehicle trips to and from the development would be the primary source of operational emissions. The following table provides estimated operational emissions because of the project.

Operational Emissions						
Emissions Source	**Pollutant (tons/year)**					
	ROG	**NOX**	**CO**	**SOX**	**PM10**	**PM2.5**
Unmitigated Operational Emissions	1.18	8.06	4.50	0.0	0.32	14.07
SJVAPCD Threshold	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Mitchell 2019.

As shown in the above table, operational emissions are also not predicted to exceed SJVAPCD significance thresholds levels. Mitigation Measure 1 requires compliance with all air quality measures and rules required by the SJVAPCD, including those in place to prevent operational emissions from exceeding SJVAPCD thresholds.

With implementation of Mitigation Measure 1, the project would not conflict with, or obstruct implementation of, the applicable air quality plan. Mitigation Measure 2 requires compliance with the SJVAPCD's Indirect Source Rule (Rule 9510). With implementation of Mitigation Measures 1 and 2, the project would not conflict with or obstruct implementation of the applicable air quality plan.

b. **Less-than-significant with mitigation incorporated.** Under GAMAQI, any project that would have individually significant air quality impacts would also be considered to have significant cumulative air quality impacts. Impacts of local pollutants are cumulatively significant when the combined emissions from the project and other planned projects exceed air quality standards. The following table shows the project's contribution to cumulative emissions calculated for both Kern County and the greater SJVAB.

Cumulative Emissions						
Emissions Inventory	**Pollutants (tons/year)**					
	ROG	**NOX**	**CO**	**SOX**	**PM10**	**PM2.5**
Kern County – 2012[1]	36,026	26,426	58,108	949	16,097	4,964
SJVAB – 2012[1]	218,964	119,282	490,998	4,526	117,567	40,150
Project	1.18	8.06	4.50	0.0	0.32	14.07
Project % of Kern	0.003	0.031	0.008	0.0	0.002	0.28
Project % of SJVAB	0.0005	0.007	0.0009	0.0	0.0003	0.035
[1]Latest inventory available as of May 2018.						

As shown in the above table, the project does not pose a significant increase to estimated cumulative emissions for criteria pollutants in nonattainment within Kern County and the greater SJVAB. The project's regional contribution to cumulative impacts would be negligible (well less than 1% for all pollutants under consideration) and therefore, the project's contribution is not cumulatively considerable.

Additionally, the GAMAQI, citing California Code of Regulations (CCR) Section15064(h)(3), states on page 66 that "[a] Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located" (SJVAPCD 2015).

Mitigation measures in this MND require compliance with air quality control measures and rules required by the SJVAPCD, which include, but are not limited to, SJVAPCD Rule 2010 (Permits Required), SJVAPCD Rule 2201 (New and Modified Stationary Source Review Rule), SJVAPCD Rule 4102 (Nuisance), and SJVAPCD Rule 9510 (Indirect Source Rule), each of which is discussed below.

SJVAPCD Rule 2010 requires any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate from the SJVAPCD Air Pollution Control Officer (APCO). The project will comply with this rule by obtaining authorization from APCO prior to commencing construction on the project.

SJVAPCD Rule 2201 requires review and offset of stationary sources of air pollution and no net increase in emissions above specified thresholds from new and modified stationary sources of all nonattainment pollutants and their precursors. This is achieved through the use of mechanisms as approved by the SJVAPCD, such as emission trade-offs by which a permit to construct or operate any source pollution is granted. The project will comply with this rule by demonstrating compliance when obtaining authorization from APCO under Rule 2010. For example, compliance with Rule 2201 may include using Best Available Control Technology and providing emission offsets.

SJVAPCD Rule 4102 protects the health and safety of the public by prohibiting discharge from any source whatsoever of air contaminants that cause injury, detriment, nuisance, or other annoyance to any considerable number of people. The project will comply with this rule by not discharging air contaminants or other materials, which cause injury, detriment, nuisance, or other annoyance to any considerable number of people.

SJVAPCD Rule 9510 requires the reduction of emissions of nitrogen oxides (NOX) and particulate matter smaller than ten microns in aerodynamic diameter (PM10) associated with construction and operational activities of development projects occurring within the San Joaquin Valley. Rule 9510 applies to new development projects that would equal or exceed specific size limits called applicability thresholds (e.g., developing more than 2,000 square feet of commercial space, 25,000 square feet of light industrial space, 10,000 square feet of heavy industrial space, or 50 residential units). The project is subject to SJVAPCD Rule 9510 because it exceeds the applicability threshold of 50 residential or dwelling units. Accordingly, the project must reduce a portion of the emissions occurring during construction and operational phases through on-site measures, or pay off-site

mitigation fees. The objective of this rule is to reduce construction NOX and PM10 emissions by 20% and 45%, respectively, as well as to reduce operational NOX and PM10 emissions by 33.3% and 50%, respectively, when compared to unmitigated projects. The SJVAPCD uses CalEEMod (California Emission Estimator Model) to estimate emissions of NOX and PM10 for potential land uses. Examples of measures that may be implemented to reduce emissions pursuant to this rule include, but are not limited to, incorporating energy efficiency beyond Title 24 requirements, providing bicycle lanes throughout a project, using cleaner fleet construction vehicles, providing employee incentives for using alternative transportation, and building in proximity to existing or planned bus stops. When a development project cannot reduce its NOX and PM10 emissions to the level required by Rule 9510, then the difference must be mitigated through the payment of an offsite emissions reduction fee. One hundred percent (100%) of all off-site mitigation fees are used by the SJVAPCD to fund emission reduction projects through its Incentives Programs, achieving emission reductions on behalf of the project.

Due to the fact that 1) the air quality modeling indicates that the project's regional contribution to cumulative impacts would be negligible and 2) the project would comply with the requirements of the SJVAPCD attainment plans and rules, and mitigation measures require the applicant to provide proof of such compliance, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c. **Less than significant with mitigation incorporated.** Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved that expose sensitive receptors to sustained exposure to any pollutants present. Examples of the types of land use that are sensitive receptors include residences, retirement facilities, hospitals, and schools. The most sensitive portions of the population are children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

The closest off-site sensitive receptors are existing residences in a mobile home park located south of the project across Taft Highway. Additional more distant sensitive receptors are located in residential subdivisions north of the project site. The AQIA (Mitchell 2019) identified that the primary impact to sensitive receptors would be from diesel particulate matter emitted by diesel trucks accessing the site. Therefore, a health risk assessment (HRA) was prepared within the AQIA. It was determined that emissions generated from construction and operation of the project would be less than the SJVAPCD screening criteria. Mitigation Measure 1 requires compliance with SJVAPCD rules and regulations including enforcement of California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations, which requires truck idling times to be minimized by shutting off equipment when not in use or reducing the maximum idling time to five minutes. With the implementation of Mitigation Measure 1, impacts would be less than significant.

d. **Less than significant with mitigation incorporated.** The AQIA (Mitchell 2019) concludes that heavy-duty equipment in the project area during construction would emit odors; however, the construction activity would cease to occur after completion. No other sources of objectionable odors have been identified for the project. With the implementation of Mitigation Measure 1, which requires proof of SJVAPCD compliance including odor regulations, the project would not create objectionable odors affecting a substantial number of people.

IV. BIOLOGICAL RESOURCES

a. **Less-than-significant with mitigation incorporated.** A Biological Resources Assessment was completed for the proposed project. It was determined that the project site has the potential to result in significant impacts to some special-status wildlife species; however, no listed special-status plant species were found on the site during reconnaissance-level surveys (QK 2019).

San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*), Swainson's hawk (*Buteo swainsoni*), American Badger (*Taxidea taxus),* and burrowing owl (BUOW) (*Athene cunicularia*) have a moderate potential to occur on the project site due to the presence of suitable habitat and/or known records in the project vicinity. During the reconnaissance survey, a potential SJKF den was observed. The SJKF is known to be a transient forager and could be a resident in the project vicinity, and therefore may occupy the project site occasionally. No indicators of occupation or use by the remainder of the species (e.g., scat, tracks, nesting materials, prey remains, or any other sign) were identified during the field survey; however, there is potential for use by these species in the future.

The project is subject to the terms of the *Metropolitan Bakersfield Habitat Conservation Plan* (MBHCP) and associated Section 10(a)(1)(b) and Section 2081 permits issued to the by USFWS and CDFW, respectively. The project is also subject to ITP No. 2081-2013-058-04 (ITP) and associated Mitigation Monitoring and Reporting Program (MMRP). These documents are hereby incorporated by reference. Terms of these permits require applicants for all development projects within the plan area to pay habitat mitigation fees and notify agencies prior to grading in areas covered under the permit.

The current MBHCP expires on February 28, 2022. To ensure take of covered species does not occur after the expiration date, fees must be paid no later than August 31, 2021 and all covered activities must be completed by the MBHCP expiration date of February 28, 2022. As determined by the City, only projects ready to be issued an urban development permit, grading plan approval, or building permit will be eligible to pay fees under the current MBHCP. Early payment or pre-payment of MBHCP fees shall not be allowed. The ability of the City to issue urban development permits is governed by the terms of the MBHCP. Urban development permits issued after the 2022 expiration date may be subject to a new or revised Habitat Conservation Plan, if approved, or be required to comply directly with requests of the U.S. Fish & Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW).

Mitigation Measure 3 requires a survey and compliance with mitigation measures outlined in the ITP prior to ground disturbance for any special-status wildlife species that have the potential to occur at the project site. Mitigation Measure 4 requires a focused survey for burrowing owl and measures in coordination with CDFW in the event that BUOW are found onsite. With implementation of Mitigation Measures 3 and 4, the project would not 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 CDFW or USFWS.

b. **No impact.** There is no riparian habitat or other sensitive natural community located within the project site (QK 2019). The project is also not located within, or adjacent to, the Kern River riparian habitat area. Therefore, the project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community.

c. **No impact.** Based on the results of the field survey, there are no wetlands, as defined by Section 404 of the federal Clean Water Act (CWA), located within the project site (QK 2019). Therefore, the project would not have a substantial adverse effect on federally-protected wetlands.

d. **Less-than-significant with mitigation incorporated.** The project site is not within the Kern River floodplain (noted as a wildlife corridor in the MBHCP) or any other location that can be considered a wildlife movement corridor or linkage. Therefore, it was concluded that the project would not interfere with wildlife movement.

There is the potential during construction to temporarily affect nursery sites such as dens. Project construction could cause the direct destruction of a nursery site or cause enough of an indirect disturbance to cause special-status wildlife to abandon a nursery site. However, Mitigation Measure 3 require preconstruction surveys and, if necessary, additional mitigation recommended by a qualified biologist and CDFW to reduce potential impacts to nursery sites. With the implementation of Mitigation Measure 3, the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with an established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e. **Less-than-significant impact.** It was concluded that the proposed project does not conflict with the MBHCP, which addresses biological impacts within the MBGP area. The MBHCP has been adopted as policy and is implemented by ordinance. The development entitled by this proposal would be required to comply with the MBHCP. Therefore, the project would not conflict with any local policies or ordinances protecting biological resources.

f. **Less-than-significant with mitigation incorporated.** Please refer to responses IV.a, IV.d, and IV.e. With implementation of Mitigation Measure 3, the project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES

a. **No Impact.** A field survey (ASM 2019) was performed for the project site by a qualified cultural resources specialist. It has been concluded that the project site does not contain historical resources (ASM 2019). Therefore, the project would not cause a substantial adverse change in the significance of a historical resource.

b. **Less-than-significant with mitigation incorporated.** It has been concluded that the project site does not contain any known archaeological resources (ASM 2019). However, there is still the potential to unearth previously unknown archaeological resources at the site, and grading and other ground-disturbing activities have the potential to damage or destroy such resources. Mitigation Measure 5 requires that construction workers are provided with cultural awareness training. Mitigation Measure 6 requires ceasing work and investigating any discovery in the event that previously unknown archaeological resources are unearthed during construction. With the implementation of Mitigation Measures 5 and 6, the project would not cause a substantial adverse change in the significance of an archaeological resource.

c. **Less-than-significant with mitigation incorporated.** There are no known human remains found at the project site. The project could inadvertently encounter previously unknown human remains during ground disturbing activities. Mitigation Measure 7 requires that if any human remains are found at the site during construction, work would cease and the remains would be handled pursuant to applicable law. With implementation of Mitigation Measure 7, the project would not significantly disturb any human remains.

VI. ENERGY

a. **Less-than-significant impact.** The development is the new construction of a travel stop on 20.55 gross acres including a gas station/convenience store, fast-food restaurant with drive-thru, and an on-site truck maintenance building. Project construction would require temporary energy demands typical of other commercial and light industrial construction projects that occur throughout the state and this development's construction would not result in inefficient or unnecessary consumption of energy resources beyond typical construction. All new construction within the City of Bakersfield must adhere to modern building standards, including California Code of Regulations Title 24, which outlines energy efficiency standards for new residential and nonresidential buildings to ensure that new buildings do not wastefully, inefficiently, or unnecessarily consume energy. Therefore, the project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

b. **Less-than-significant impact.** There is no adopted plan by the City of Bakersfield for renewable energy or energy efficiency. As discussed in VI.a., all new development projects within the City are required to adhere to modern building standards related to energy efficiency. Additionally, the City encourages applicants and developers to go beyond the required standards and make their developments even more efficient through programs such as LEED, or Leadership in Energy and Environmental Design, which is a green building rating system that provides a framework to create healthy, highly efficient, and cost-saving green buildings. Other encouraged programs available applicants and developers are Title 20 appliance energy efficiency standards and 2005 building energy efficiency standards. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

VII. GEOLOGY AND SOILS

a. The following discusses the potential for the project to expose people or structures to substantial adverse effects because of various geologic hazards. The City is within a seismically active area. According to the MBGP, major active fault systems border the southern portion of the San Joaquin Valley. Among these major active fault systems include the San Andreas, Breckenridge-Kern County, Garlock, Pond Poso, and White Wolf faults. There are numerous additional smaller faults suspected to occur within the Bakersfield area, which may or may not be active. The active faults have a maximum credible Richter magnitude that ranges from 6.0 (Breckenridge-Kern County) to 8.3 (San Andreas). Potential seismic hazards in the planning area involve strong ground shaking, fault rupture, liquefaction, and landslides.

    i. **No Impact.** Ground rupture is ground deformation that occurs along the surface trace of a fault during an earthquake. The project site is not included within the boundaries of an "Earthquake Fault Zone" as defined in the Alquist-Priolo Earthquake Fault Zoning Act (DOC 2019). Therefore, the project would not expose

people or structures to potential substantial adverse effects involving rupture of a known earthquake fault.

ii. **Less-than-significant impact.** The City is within a seismically active area. Future structures proposed on the project site are required by state law and City ordinance to be constructed in accordance with the Uniform Building Code (specifically Seismic Zone 4, which has the most stringent seismic construction requirements in the United States), and to adhere to all modern earthquake construction standards. Therefore, the project would not expose people or structures to potential substantial adverse effects involving strong seismic ground shaking.

iii. **Less-than-significant impact.** The most common seismic-related ground failure is liquefaction and lateral spreading. In both cases, during periods of ground motion caused by an event such as an earthquake, loose materials transform from a solid state to near-liquid state because of increased pore water pressure. Such ground failure generally requires a high water table and poorly draining soils in order for such ground failure to occur. The project site's soils are Kimberlina fine sandy loam, Granoso sandy loam, and Bakersfield fine sandy loam, which are generally well draining (USDA 2019). Public-supply wells in Kern County are at depths between 600 and 800 feet below land surface (USGS 2016) and therefore, groundwater levels are not close enough to the ground surface to result in sufficiently saturated soils suitable for liquefaction. As a result, the potential for liquefaction at the project site is low. In addition, future structures proposed on the project site are required by state law and City ordinance to be constructed in accordance with the Uniform Building Code, including those relating to soil characteristics. Therefore, the project would not expose people or structures to potential substantial adverse effects involving seismic-related ground failure, including liquefaction.

iv. **No Impact.** In Kern County, the common types of landslides induced by earthquake occur on steeper slopes found in the foothills and along the Kern River Canyon; in these areas, landslides are generally associated with bluff and stream bank failure, rock slide, and slope slip on steep slopes. The project site is generally flat, there are no such geologic features located at the project site, and the site is not located near the Kern River Canyon. Therefore, the project would not expose people or structures to potential substantial adverse effects involving landslides.

b. **Less-than-significant impact.** The project site's soils have low-to-medium susceptibility to sheet and rill erosion by rainfall and low susceptibility to wind erosion at the ground surface (USDA 2019). The relatively low precipitation in the project area [on average about 6 inches/year] results in surface runoff that is intermittent and temporary in nature. The erosion potential at the site, low average rainfall, and the fact that the soils are well drained does not make the project site susceptible to substantial soil erosion or loss of topsoil.

Construction of the site would temporarily disturb soils, which could loosen soil, and the removal of vegetation could contribute to future soil loss and erosion by wind and storm water runoff. The project would have to request coverage under the National Pollutant Discharge Elimination System (NPDES) *General Permit for Storm Water Discharges Associated with Construction Activities* (No. 2012-0006-DWQ) (General Permit) because

the project would result in one or more acres of ground disturbance. To conform to the requirements of the General Permit, a Storm Water Pollution Prevention Plan (SWPPP) would need to be prepared that specifies best management practices (BMPs) to prevent construction pollutants, including eroded soils (such as topsoil), from moving offsite. Implementation of the General Permit and BMPs requirements would mitigate erosion of soil during construction activities.

During operation, the soils would be sufficiently compacted to required engineered specifications, revegetated in compliance with City requirements, or paved over with impervious surfaces such that the soils at the site would not be particularly susceptible to soil erosion. Therefore, the project would not result in substantial soil erosion or the loss of topsoil.

c. **Less-than-significant impact.** As discussed in VII.a.iii. and VII.a.iv., the project site's soils would not expose people or structures to potential substantial adverse effects involving seismic-related ground failure, including liquefaction, lateral spreading, or landslides.

Subsidence is part of the baseline condition in the project area due to historic groundwater pumping and the resultant subsidence that occurs with such activities. The project would not substantially contribute to this baseline condition because the projected water use has been conditionally approved by the Greenfield County Water District (GCWD), upon annexation into the district (GCWD 2019). The project site has been considered by the GCWD against its most current Urban Water Management Plan (UWMP) and it was concluded that the District had sufficient existing capacity to service the project. Therefore, the project has already been considered in the groundwater analysis in the UWMP and would not exacerbate subsidence in the area beyond the baseline condition.

Collapsible soils consist of loose, dry, low-density materials that collapse and compact under the addition of water or excessive loading. Because the project site is derived from alluvium, which is generally loose material, there is the potential for collapsible soils. Future structures proposed on the project site are required by state law and City ordinance to be constructed in accordance with the Uniform Building Code, including those relating to soil characteristics. Therefore, the project would not be located on a geologic unit or soil that is unstable, or that would become unstable because of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

d. **Less-than-significant impact.** When a soil has 35% or more clay content, it is considered a clayey soil. Kimberlina soils and other sandy loams generally have 6 to 25% clay content (USDA 2019) and therefore, do not have a high potential to be expansive. Additionally, future structures proposed on the project site are required by state law and City ordinance to be constructed in accordance with the Uniform Building Code, including those relating to soil characteristics. Therefore, the project would not be located on expansive soil creating substantial risks to life or property.

e. **No impact.** The project would not require the use of septic tanks or alternative wastewater disposal systems because the project would connect to existing City sewer services in the area. Therefore, there would be no impacts related to soils incapable of adequately supporting septic tanks or alternative waste water disposal systems.

f. **Less-than-significant with mitigation incorporated.** Paleontological sensitivity is determined by the potential for a geologic unit to produce scientifically significant fossils. Because paleontological resources typically occur in the substratum soil horizon, surface expressions are often not visible during a pedestrian survey. Paleontological sensitivity is therefore derived from known fossil data collected from the entire geologic unit. A paleontological records search was completed for the project (McComas 2019). According to the published geological reports covering the project area, the project site consists of late Holocene-age alluvial fan deposits. In general, late Holocene-age alluvial deposits are considered unlikely to contain preserved paleontological remains.

However, these sediments commonly grade downward into older, Pleistocene-age alluvial deposits that have the potential to contain significant fossils. This geological formation consists of older alluvium deposits that have the potential to contain unknown paleontological resources or unique geologic features when excavation exceeds approximately 10 feet in depth.

Similar to archaeological resources, there is the potential to unearth previously unknown paleontological resources at the site, and grading and other ground-disturbing activities that surpass 10 feet below original ground surface have the potential to damage or destroy such resources. With the implementation of Mitigation Measure 6, the project would not directly or indirectly destroy a unique paleontological resource, site, or unique geologic feature.

VIII. GREENHOUSE GAS EMISSIONS

a. **Less-than-significant impact.** The project would generate an incremental contribution and, when combined with the cumulative increase of all other sources of greenhouse gases (GHG), could contribute to global climate change impacts. Although the project is expected to emit GHG, the emission of GHG by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be relatively very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. Therefore, a project's GHG emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis.

According to the SJVAPCD, for a project to conform to the goals of AB 32, at least a 29% reduction from the 2002-2004 business-as-usual (BAU) period by 2020 must be demonstrated. The GHG Reduction level for the State to reach 1990 emission levels by 2020 was reduced to 21.7 percent from BAU in 2020 in the 2014 First Update to the Scoping Plan to account for slower than projected growth after the 2008 recession. The project is expected to commence operations in 2022, which is beyond the AB 32 2020 milestone year. The SJVAPCD and other agencies have not yet developed a new threshold based on SB 32 2030 targets. Therefore, the analysis of the project's reduction from BAU is based on emissions in 2030 compared with the 21.7 percent reduction standard used as a measure of significance.

The project's GHG emissions were estimated (Mitchell 2019) and are summarized in the following table:

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2030 (with Regulation and Design Features)	Percent Reduction
Total	1,843.85	1,215.65	34.1%
	Reduction from BAU	**628.2**	--
	Percent Reduction	**34.1%**	--
	Significance Threshold	**21.7%**	--
	Are emissions significant?	**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: Mitchell 2019

As shown in the above table, the project results in a 34.1% reduction in GHG emissions in comparison to BAU, which satisfies the AB 32-mandated 29% reduction and exceeds the 21.7% required to show consistency with AB 32 targets. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

b. **Less-than-significant impact.** CARB is responsible for the coordination and administration of both federal and state air pollution control programs within California. According to California's Climate Change Scoping Plan, there must be statewide reduction GHG emissions to 1990 levels by 2020. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 29% from BAU emission levels projected for 2020. In addition, per SB 375 requirements, CARB has adopted regional reduction targets, which call for a 5% reduction in per-capita emissions by 2020 and 10% reduction in 2035 within the San Joaquin Valley using 2005 as the baseline. These regional reduction targets will be a part of the Kern COG Sustainable Communities Strategy. The SJVAPCD has adopted guidance (*Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*) and a policy (District Policy – Addressing GHG Emission Impacts for Stationary Source Projects under CEQA When Serving as the Lead Agency).

As proposed, the project would not conflict with any statewide policy, regional plan, or local guidance or policy adopted for the purpose of reducing GHG emissions. The project would not interfere with the implementation of AB 32 and SB 375 because it would be consistent with the GHG emission reduction targets identified by CARB and the Scoping Plan. The project achieves BAU GHG emissions reduction equal to or greater than the 29% targeted reduction goal. CARB defines BAU as "the emissions that would be expected to occur in the absence of any GHG reduction actions." Therefore, the project would be consistent with these statewide measures and impacts are considered not significant or cumulatively considerable under CEQA. Therefore, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHG.

IX. HAZARDS AND HAZARDOUS MATERIALS

a. **Less-than-significant impact.** Construction activities would require the transport, storage, use, and/or disposal of hazardous materials such as fuels and greases for the fueling/servicing of construction equipment, and there is the potential for upset and accident conditions that could release such material into the environment. Such substances would be stored in temporary storage tanks/sheds that would be located at the site. Although these types of materials are not acutely hazardous, they are classified as hazardous materials and create the potential for accidental spillage, which could

expose construction workers. All transport, storage, use, and disposal of hazardous materials used in the construction of the project would be in strict accordance with federal and state laws and regulations. During construction of the project, Material Safety Data Sheets (MSDS) for all applicable materials present at the site would be made readily available to onsite personnel. During construction, non-hazardous construction debris would be generated and disposed of at approved facilities for handling such waste. Also, during construction, waste disposal would be managed using portable toilets located at reasonably accessible onsite locations.

The project proposes a travel stop that includes fuel stations and an on-site maintenance building and therefore, could involve the routine transport, use, or disposal of hazardous materials as defined by the Hazardous Materials Transportation Uniform Safety Act. Users would be required to follow any instructions for use and storage provided on product labels to prevent any accidents in the workplace. Users would also be required to read and follow product labels for disposal directions to eliminate the risk of products exploding, igniting, leaking, mixing with other chemicals, or posing other hazards on the way to a disposal facility. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b. **Less-than-significant impact.** Please refer to response VIX.a. Therefore, the project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment.

c. **No impact.** The AQIA concluded that the project would not significantly affect sensitive receptors (Mitchell 2019). In addition, the project site is not located within one-quarter mile of an existing or proposed school. Therefore, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.

d. **No impact.** The EnviroStor (DTSC 2019) and Cortese (CalEPA 2019) lists pursuant to Government Code (GC) Section 65962.5 were reviewed. No portion of the project site is identified on either list, which provides the location of known hazardous waste concerns. Therefore, the project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to GC Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

e. **No impact.** The project site is not located within the Kern County *Airport Land Use Compatibility Plan* area (Kern County 2012). The closest airport to the project site is the Bakersfield Municipal Airport, which is over 2 miles to the northeast of the site. Therefore, the project would not result in a safety hazard for people residing or working in the project area.

f. **Less-than-significant impact.** The project would have to develop or improve roads to the site as well as internal roads that are in compliance with the City's Fire Code to allow emergency vehicles adequate access to the site and all portions of the site. Access to the site would be maintained throughout the construction period, and appropriate detours would be provided in the event of potential temporary road closures. The project would not interfere with any local or regional emergency response or evacuation plans because the project would not result in a substantial alteration to the adjacent and area circulation system. The project is typical of urban development in Bakersfield, and is not

inconsistent with the adopted City of Bakersfield Hazardous Materials Area Plan (Bakersfield 1997). This plan identifies responsibilities and provides coordination of emergency response at the local level to hazardous materials incidents. Therefore, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g. **Less-than-significant impact.** The project site is not located within a "very high," "high," or "moderate" fire hazard severity zone (CalFire 2008). The site consists of vacant land, and its vicinity is developed with residential and commercial land uses that do not possess high fuel loads that have a high potential to cause a wildland fire. The project site would be developed with hardscapes and irrigated landscaping, which would further reduce fire potential at the site. Additionally, the City and County require "defensible space" within areas of the County susceptible to wildland fires as shown on CalFire maps through the Fire Hazard Reduction Program. Defensible space is the buffer created between a building and the grass, trees, shrubs, or any wildland area that surrounds it. Therefore, the project would not expose people or structures to a significant risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

X. HYDROLOGY AND WATER QUALITY

a. **Less-than-significant impact.** Construction would include ground-disturbing activities. As discussed in VII.b, the project site's soil types have a low-to-medium susceptibility to sheet and rill erosion by rainfall and a low susceptibility to wind erosion at the ground surface. Disturbance of onsite soils during construction could result in soil erosion and siltation, and subsequent water quality degradation through increased turbidity and sediment deposition during storm events to offsite locations. Additionally, disturbed soils have an increased potential for fugitive dust to be released into the air and carried offsite. As described in VII.b, the project would be required to comply with the General Permit. To conform to the requirements of the General Permit, a SWPPP would need to be prepared that specifies BMPs to prevent construction pollutants from moving offsite. The project is required to comply with the General Permit because project-related construction activities would disturb at least 1 acre of soil.

   The City owns and maintains a municipal separate storm sewer system (MS4). The project's operational urban storm water discharges are covered under the Central Valley Water Quality Control Board (CVRWQCB) *National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements General Permit for Discharges from Municipal Separate Storm Sewer Systems* (Order No. R5-2016-0040; NPDES No. CAS0085324) (MS4 Permit) (CVRWQCB 2016). The MS4 Permit mandates the implementation of a storm water management framework to ensure that water quality is maintained within the City because of operational storm water discharges throughout the City, including the project site. By complying with the General Permit and MS4 Permit, the project would not violate any water quality standards or waste discharge requirements.

b. **Less-than-significant impact.** Potable water from the project would be supplied by GCWD. The GCWD receives all of its supplies from groundwater sources. The project's projected water use has been conditionally approved by the GCWD (GCWD 2019) upon annexation into the District and therefore, the project site has been considered by the GCWD against its most current UWMP. By state law, current UWMPs do not need to address the Sustainable Groundwater Management Act (SGMA) or sustainable

groundwater management at this time. It was concluded that the GCWD had sufficient existing capacity to service the project. As a result, the project would not 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.

c. The following discusses whether the project would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces.

   i. **Less-than-significant impact.** The project site does not contain any blue-line streams or other surface water features (QK 2019) and therefore, the project would not alter the course of a river or stream. The project site would be graded and, as a result, the internal drainage pattern at the site would be altered from the baseline condition. Additionally, the project would result in increased impervious surfaces (i.e., building pads, sidewalks, asphalt parking area, etc.) at the site, which would reduce percolation to ground and result in greater amounts of storm water runoff concentrations at the site. If uncontrolled, differences in drainage patterns and increased impervious surfaces could result in substantial erosion or siltation on- or offsite. However, the project would be required to comply with the General Permit during construction and MS4 permit during operation. In order to comply with the MS4 Permit, the City requires compliance with adopted building codes, including complying with an approved drainage plan, which avoids on- and offsite flooding, erosion, and siltation problems. Therefore, the project would not 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 that would result in substantial erosion or siltation on- or offsite.

   ii. **Less-than-significant impact.** Please refer to response X.c.i. Therefore, the project would not 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 that would result in flooding on- or offsite.

   iii. **Less-than-significant impact.** Please refer to response X.c.i. Therefore, the project would not create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

   iv. **No Impact.** The project site is located outside the 500-year floodplain and is not located within a 100-year flood hazard area (FEMA 2019). Therefore, the project would not impede or redirect flood flows.

d. **Less-than-significant impact.** As discussed in responses X.g. and IX.h., the project is not located within a floodplain. There are no nearby levees that would be susceptible to failure or flooding of the site. The project site, like most of the City, is located within the Lake Isabella flood inundation area (Kern County 2017), which is the area that would experience flooding in the event that there was a catastrophic failure of the Lake Isabella Dam. There is an approved Lake Isabella Dam Failure Evacuation Plan (Kern County 2009) that establishes a process and procedures for the mass evacuation and short-term support of populations at risk below the Lake Isabella Dam. The City would utilize the Evacuation Plan to support its Emergency Operations Plans (EOPs). With

implementation of the Evacuation Plan, the project would not 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.

e. **Less-than-significant impact.** Please refer to response X.c.i. There is currently no adopted groundwater management plan for the project site or its vicinity. Therefore, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

XI. LAND USE AND PLANNING

a. **No impact.** The project is a continuation of the existing urban development pattern of the City. The project does not include a long and linear feature, such as a freeway, railroad track, block wall, etc., that would have the potential to divide a community. The project is the development of a finite 20.55-acre project site surrounded by established streets that does not impede existing or future movement or development of the City. Therefore, the project would not physically divide an established community.

b. **No impact.** The project requires a GPA to be consistent with the MBGP, namely a change from GC to LI. The project also requires a ZC to be consistent with the Zoning Ordinance, namely a change from C-2 to M-1. If the GPA/ZC were to be approved by the City, the project would be consistent with both the MBGP and Zoning Ordinance. Therefore, the project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

XII. MINERAL RESOURCES

a. **No impact.** The project site is not within the administrative boundaries of an oilfield and there are no oil wells found on the site (DOGGR 2019). The only other potential mineral resource in the area is aggregate for the making of concrete. Aggregate is mined in alluvial fans and along existing and historical waterways. There are no blue-line water features or existing or planned aggregate mining operations at the site. Therefore, the project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

b. **No impact.** The project site is currently designated GC (General Commercial) and, if the GPA is approved, this designation would change to LI (Light Industrial). No portion of the site is designated for a potential mineral resource extraction use such as R-MP (Mineral and Petroleum). Therefore, the project would not result in the loss of availability of a locally-important mineral resource recovery site that is delineated in a local general plan, specific plan or other land use plan.

XIII. NOISE

a. **Less-than-significant impact.** The project would generate both short-term construction noise and operational noise. The first type of short-term construction noise would result from transport of construction equipment and materials to the project site, and construction worker commutes. These transportation activities would incrementally raise noise levels on access roads leading to the site. A one-time trip to move pieces of heavy equipment for grading and construction activities would result in single-event noise at a

distance of 50 feet from a sensitive noise receptor that would reach a maximum level of 84 A-weighted decibels (dBA). Because the equipment would be left onsite for the duration of project construction, the one-time trip would not add to the daily traffic noise in the project vicinity. The total daily vehicle trips resulting from construction worker commutes would be minimal when compared to existing traffic volumes on the affected streets, and the long-term noise level change would not be perceptible.

The second type of short-term construction noise is related to noise generated during project construction. The site preparation and grading phase, which includes excavation and grading, tends to generate the highest noise levels because earthmoving equipment is the noisiest construction equipment. Construction noise levels during grading would be less than 70 dBA, which would not exceed the hourly noise level standard at the nearest sensitive uses. Construction noise would cease to occur once project construction is completed. The project will also be required to comply with the construction hours specified in the City Noise Ordinance, which states that construction activities are limited to the hours of 6:00 a.m. and 9:00 p.m. on weekdays, and between the hours of 8:00 a.m. and 9:00 p.m. on weekends.

Project operations would generate stationary noise sources including parking lot activities, truck repair equipment, and mechanical ventilation equipment. The sound levels from these activities are required to be in compliance with the Bakersfield Municipal Code regarding noise. A noise study was completed for the project (FirstCarbon Solutions 2019). The analysis determined that stationary operational noise levels around the project site would experience noise level impacts that would be less than the daytime and nighttime hourly noise level standards of 55 dBA and 50 dBA, respectively, at the nearest residential property line.

Therefore, the project would not generate substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b. **Less-than-significant impact.** Some ground-borne vibration and noise would originate from earth movement and building activities during the project's construction phase. Ground-borne noise and vibration from construction activity would be mostly low to moderate). The closest structures to the project site are the existing residential uses to the south, and the commercial building located west of the project site across H Street. The operation of typical construction equipment would generate ground-borne vibrations that would not exceed guidelines that are considered safe for any type of buildings. Operation of the proposed project would not generate ground-borne vibration. Therefore, the project would not generate excessive ground-borne vibration or ground-borne noise levels and impacts are less than significant.

c. **No impact.** Please refer to response IX.e. The project is not located within the proximity of an airport or private air strip. Therefore, the project would not expose people residing or working in the project area to excessive noise levels for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.

XIV. POPULATION AND HOUSING

a. **Less-than-significant impact.** The project is the development of a travel stop including a convenience store, fuel pumps, fast food restaurant with drive thru, and an on-site truck maintenance building. The project is estimated to have a total of 64 daily employees. The project would not directly induce population growth through the development of residential land uses or large-scale business, or indirectly by the extension of infrastructure or removal of another barrier to growth. Therefore, the project would not induce substantial population growth in an area, either directly or indirectly. Impacts are less than significant.

b. **No impact.** The project site consists of vacant land. Therefore, the project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

XV. PUBLIC SERVICES

a. The following discusses whether the project would result in substantial adverse physical impacts to public services. The need for additional public service is generally directly correlated to population growth and the resultant additional population's need for services beyond what is currently available.

   i. **Less-than-significant impact.** Fire protection services for the Metropolitan Bakersfield area are provided through a joint fire protection agreement between the City and County. The project may necessitate the addition of fire equipment and personnel to maintain current levels of service, and this potential increase in fire protection services would be paid for by property taxes generated by the proposed development. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.

   ii. **Less-than-significant impact.** Police protection for the project would be provided by the Bakersfield Police Department. Potential increase in services can be paid for by property taxes generated by this development. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection.

   iii. **No impact.** The project is not growth inducing and therefore, is a not driver for population growth, including the need for additional schools. The need for additional schools can be proportionately paid for by increased property tax revenues as a result of the project. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools.

iv. **No impact.** The project is not growth inducing and therefore, is a not driver for population growth, including the need for additional recreational opportunities. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks.

v. **Less-than-significant impact.** The project and eventual buildup of this area would result in an increase in maintenance responsibility for the City. Though the project may necessitate increased maintenance for other public facilities, this potential increase can be paid for by property taxes generated by this development. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities.

XVI. RECREATION

a. **No impact.** Please refer to response XV.a.iv. Therefore, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

b. **No impact.** Please refer to response XV.a.iv. Therefore, the project would not include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

XVII. TRANSPORTATION AND TRAFFIC

a. **Less-than-significant with mitigation incorporated.** The project would result in temporary construction-related traffic impacts. Construction workers traveling to and from the project site as well as construction material delivery would result in additional vehicle trips to the area's roadway system. Construction material delivery may require a number of trips for oversized vehicles that may travel at slower speeds than existing traffic and, due to their size, may intrude into adjacent travel lanes. These trips may temporarily degrade level of service (LOS) on area roadways and at intersections. Additionally, the total number of vehicle trips associated with all construction-related traffic (including construction worker trips) could temporarily increase daily traffic volumes on local roadways and intersections. The project may require temporary lane closures or the need for flagmen to safely direct traffic on roadways near the project site. However, once the project is built, it would not result in any permanent traffic-related effects.

Policy 36 of the Metropolitan Bakersfield General Plan Circulation Element states:

> Prevent streets and intersections from degrading below Level of Service "C" where possible due to physical constraints (as defined in a Level of Service standard) or when the existing Level of Service if below "C" prevent where possible further degradation due to new development or expansion of existing development with a

three-part mitigation program: adjacent right-of-way dedication, access improvements and/or an area-wide impact fee. The area-wide impact fee would be used where the physical changes for mitigation are not possible due to existing development and/or the mitigation measure is part of a larger project, such as freeways, which will be built at a later date.

A traffic analysis (R&S 2019) that analyzed operational traffic impacts was prepared for the project to determine if operations would degrade the performance of the circulation system per the requirements of Policy 36. Policy 36 of the Circulation Element of the MBGP requires the City to prevent streets and intersections from degrading below a level of service C, where possible, through dedication of adjacent right-of-way, access improvements, or an area-wide impact fee. In addition, the Subdivision Ordinance requires all onsite street improvements and a proportional share of boundary street improvements to be built at the time the property is developed. The traffic analysis concluded that one intersection and four roadway segments identified in the table below would need improvements by the year 2035:

Intersection/Roadway Segment	Total Improvements Required by 2035	Mitigation
Intersection of Wible Road and Taft Highway	Add 1 EBT, 1 WBT	RTIF includes a project to improve this intersection.
Taft Highway: Wible Rd to SR 99 SB Off Ramp/Campagnoni St	Add 2 Lanes	RTIF includes a project to improve the interchange.
Taft Highway: SR 99 SB Off Ramp/Campagnoni St to S H St	Add 2 Lanes	RTIF includes a project to improve the interchange.
Taft Highway: S H St to Project Entrance	Add 2 Lanes	Taft Highway will be improved on the north side with construction of the project. South side is wide enough to be striped for 2 EB lanes.
Taft Highway: Project Entrance to Union Avenue	Add 2 Lanes	RTIF includes a project to widen Taft Highway.
Notes: EB = Eastbound; WB = Westbound; T = Through Lane Source: R&S 2019		

The analysis concluded that the project should participate in the Regional Transportation Impact Fee (RTIF) Program (see Mitigation Measure 8). With implementation of Mitigation Measure 8, the project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

b. **No impact.** While public agencies may immediately apply Section 15064.3 of the updated CCR (or CEQA Guidelines), statewide application is not required until July 1, 2020. This CCR Section 15064.3(b) states:

> Criteria for Analyzing Transportation Impacts.
>
> > (1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The traffic analysis (R&S 2019) concluded that the project's traffic impacts would be reduced to less than significant with the implementation of mitigation. Application of vehicle miles traveled (VMT) is not required in Lead agency CEQA documents until July 1, 2020, Therefore, the project would not be in conflict or be inconsistent with CCR Section 15064.3(b).

c. **Less-than-significant impact.** The project would have to comply with all conditions placed on it by the City Traffic Engineering Division in order to comply with accepted traffic engineering standards intended to reduce traffic hazards, including designing the roads so that they do not result in design feature hazards. The project is with the City limits and surrounded by compatible existing and planned land uses and land use designations. Therefore, the project would not substantially increase hazards due to a design feature or incompatible uses.

d. **Less-than-significant with mitigation incorporated.** There is the potential that, during the construction phase, the project would impede emergency access. For projects that require minor impediments of a short duration (e.g., pouring a new driveway entrance), the project would be required to obtain a street permit from City Public Works. If a project requires lane closures and/or the diversion of traffic, then a Traffic Control Plan would be required. During operations, the project would have to comply with all applicable City policies and requirements to ensure adequate emergency access.

Mitigation Measure 9 requires that, if necessary, the applicant/developer obtains a street permit or develop and get approved a Traffic Control Plan, for the construction period.

With implementation of mitigation, the project would not result in inadequate emergency access.

XVIII. TRIBAL CULTURAL RESOURCES

a. **No impact.** The project requires a GPA and therefore, request for consultation letters were sent to a list of tribal contacts received from the Native American Heritage Commission in compliance with Senate Bill (SB) 18. In the letters, the City stated that the applicable tribes may request consultation with the City regarding the preservation of, and/or mitigation of impacts to, California Native American cultural places in connection with the project. To date, none of the tribes have responded to the request. Therefore, the project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed in the California Register of Historical Resources or in a local register of historical resources.

b. **No impact.** Based on the results of the SB 18 consultation inquiry to applicable tribes, the City has determined that there are no tribal cultural resources found at the site. Therefore, the project would not cause a substantial adverse change in the significance of a tribal cultural resource that is determined by the lead agency to be significant.

XVIV. UTILITIES AND SERVICE SYSTEMS

a. **Less-than-significant impact**. The project could require the construction of new water, storm water drainage, sewer facilities; above and/or belowground electrical facilities, natural gas facilities, and telecommunications (e.g., cable, fiber optics, phone, etc.) typical of the proposed development. Water, storm water, and sewer structures would have to be designed to meet the City's *Current Subdivision & Engineering Design Manual* (Bakersfield 1999). Compliance with the Design Manual would ensure that the facilities would not result in significant environmental effects. Electrical, natural gas, and telecommunications facilities would be placed by the individual serving utilities; these entities already have in place safety and siting protocols to ensure that placement of new utilities to serve new construction would not have a significant effect on the environment. Therefore, the project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

b. **Less than significant with mitigation incorporated.** The project is within the Greenfield County Water District's water service area. The district has provided a letter stating that water service can be supplied, upon annexation into the district, in compliance with their current UWMP that accounts for normal, dry, and multiple dry years (GCWD 2019). Mitigation Measure 10 requires the applicant to submit proof of annexation into the water district prior to development. Therefore, the project has sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

c. **Less-than-significant impact.** It is anticipated that developments similar to the proposed project generate 0.5 gallons per day (GPD) of wastewater per square foot and therefore, the proposed 25,647-square-feet of buildings would require available capacity to dispose of approximately 13,000 GPD [or 0.013 million gallons per day (MGD)]. Wastewater as a result of the project would be treated at WWTP No. 2, which is owned and operated by the City. WWTP No. 2 has an overall capacity of 25 MGD and a current

available capacity of 11.3 MGD (Bakersfield 2019). The project's contribution would account for 0.12% of the available capacity and therefore, WWTP No. 2 has sufficient capacity to serve the project. As a result, it has been determined that the wastewater treatment provider which serves or may serve the project has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

d. **Less-than-significant impact.** It is assumed that solid waste generated as a result of the project would be disposed at the Bena Landfill located at 2951 Neumarkel Road, Bakersfield, CA 93307. As of July 2013, the landfill had a remaining permitted capacity of 32,808,260 cubic yards and a maximum permitted throughput of 4,500 tons/day (CalRecycle 2019a). Using a factor of 5 pounds solid waste/1,000 square foot/day (CalRecycle 2019b) for commercial and light industrial uses, 25,647-square-feet of development would generate about 128 pounds solid waste/day (0.06 tons/day). The 0.06 tons/day of solid waste generated by the project accounts for 0.001% of the maximum permitted throughput of the landfill. Therefore, the project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

e. **Less-than-significant impact.** By law, the project would be required to comply with federal, state, and local statutes and regulations, including those relating to waste reduction, litter control, and solid waste disposal.

XX. WILDFIRE

a. **Less-than-significant impact.** Please refer to response IX.f. Therefore, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

b. **Less-than-significant impact.** Please refer to response IX.g. Additionally, the project site is relatively flat, not near wildlands, the site and its surrounding do not possess high fuel loads (i.e., lots of vegetation and other burnable material) to exacerbate wildfire risks and therefore, fire-related pollutant concentrations. Therefore, the project would not exacerbate wildfires and expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors.

c. **Less-than-significant impact.** Please refer to responses IX.a., XX.a., and XX.b. Therefore, the project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

d. **Less-than-significant impact.** The project site is relatively flat, is not within a floodplain, and is not in a moderate- to high-risk area for wildfires. Therefore, the project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

a. **Less-than-significant with mitigation incorporated.** The project is subject to the terms of the MBHCP and associated Section 10(a)(1)(b) and Section 2801 permits issued to the City of Bakersfield by the U.S. Fish and Wildlife Service and the California State

Department of Fish and Wildlife, respectively. Terms of the permit require applicants for all development projects within the plan area to pay habitat mitigation fees, excavate known kit fox dens, and notify agencies prior to grading. There are no important examples of the major periods of California history or prehistory found at the site. Therefore, the project, with mitigation, would not have the potential to 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 a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b. **Less-than-significant impact.** As described in the responses above, the project has no impacts that would be defined as individually limited, but cumulatively considerable.

c. **Less-than-significant with mitigation incorporated.** As described in the responses above, the project, with mitigation, would not have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly.

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Air Quality and Greenhouse Gas Analysis Report
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City of Bakersfield, California

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BAU	Business as Usual
CalEEMod	California Emissions Estimator Model
CAPCOA	California Air Pollution Control Officers Association
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
District	San Joaquin Valley Air Pollution Control District
DPM	diesel particulate matter
EMFAC	EMission FACtors Model
EPA	United States Environmental Protection Agency
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG Rx	Greenhouse Gas Reduction Exchange
GHG(s)	greenhouse gas(es)
HAP	hazardous air pollutant
HRA	health risk assessment
IPCC	United Nations Intergovernmental Panel on Climate Change
Kern COG	Kern Council of Governments
MAQC	Mitchell Air Quality Consulting
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	metric tons of carbon dioxide equivalent
NO_X	nitrogen oxides
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_X	sulfur oxides
VOC	volatile organic compounds

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SECTION 1: EXECUTIVE SUMMARY

1.1—Purpose and Methods of Analysis

The following air quality and greenhouse gas (GHG) analysis was prepared to evaluate whether the estimated criteria air pollutants, toxic air contaminants (TACs), and GHG emissions generated from the construction and operation of the Karpe Development (project) would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2015a) and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009).

1.2—Project Description

The proposed project would develop a travel center including a convenience store, fueling facility for all types of motor vehicles, a fast-food restaurant, and a truck maintenance facility. The project site is approximately 19 acres located at the northeast corner of South H Street and Taft Highway in the City of Bakersfield. The proposed project includes the following:

- 24 fueling positions: 16 auto and eight truck fueling
- 11,166-square-foot convenience store
- 3,485-square-foot fast-food restaurant with drive-thru
- 10,992-square-foot, on-site maintenance building
- Parking areas to accommodate approximately 99 trucks and RVs
- On-site retention basin
- Approximately 121,151 square feet of landscaping.

Minor over-the-road truck services proposed include new and used tire sales, truck tire repair, replacement and/or installation, oil changes and lubrications, minor engine maintenance, and minor repairs. No major engine repairs or major services would be performed on the proposed project site. The project proponent does not market and/or advertise the sale of truck tires or light maintenance services outside the confines of the property boundaries in the traditional sense, using the marketing techniques of tire stores or services stations such as direct mail; as such, the maintenance building is intended to serve those customers who are already on-site rather than attract new traffic.

The primary activities anticipated on the proposed project site would be geared to travelers (automobile and truck) and drive-by motorists stopping to fuel, rest, and/or eat. The proposed project will be open and operational 24 hours, 7 days a week.

Diesel fuel would be stored in aboveground storage tanks. Gasoline and diesel exhaust fluid will be stored in underground storage tanks.

The proposed project would have approximately 30 to 40 employees to serve the entire site per day; while the number of employees on-site can vary: depending on the day of the week, the maximum number would not exceed 40 employees. The proposed project would be continuously open 24 hours, 7 days a week, serving an average of approximately 300 truck visits and 2,256 passenger vehicle visits per day based on the project traffic study.

The site is currently vacant. The development requires a General Plan Amendment (GPA) from its current General Commercial (GC) General Plan designation to Light Industrial (LI).

Project construction is expected to begin in April 2021 with operation commencing in January 2022.

The project's regional vicinity location is shown in Figure 1; an aerial view of the local vicinity is provided in Figure 2; and the Site Plan is provided in Figure 3.

1.3—Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the project would result in less than significant impacts for all air quality and GHG impact criteria analyzed.

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact.**

Impact AIR-2: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). **Less than significant impact.**

Impact AIR-3: The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact with mitigation.**

Impact AIR-4: The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

Impact GHG-1: The project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact.**

Impact GHG-2: The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact**.

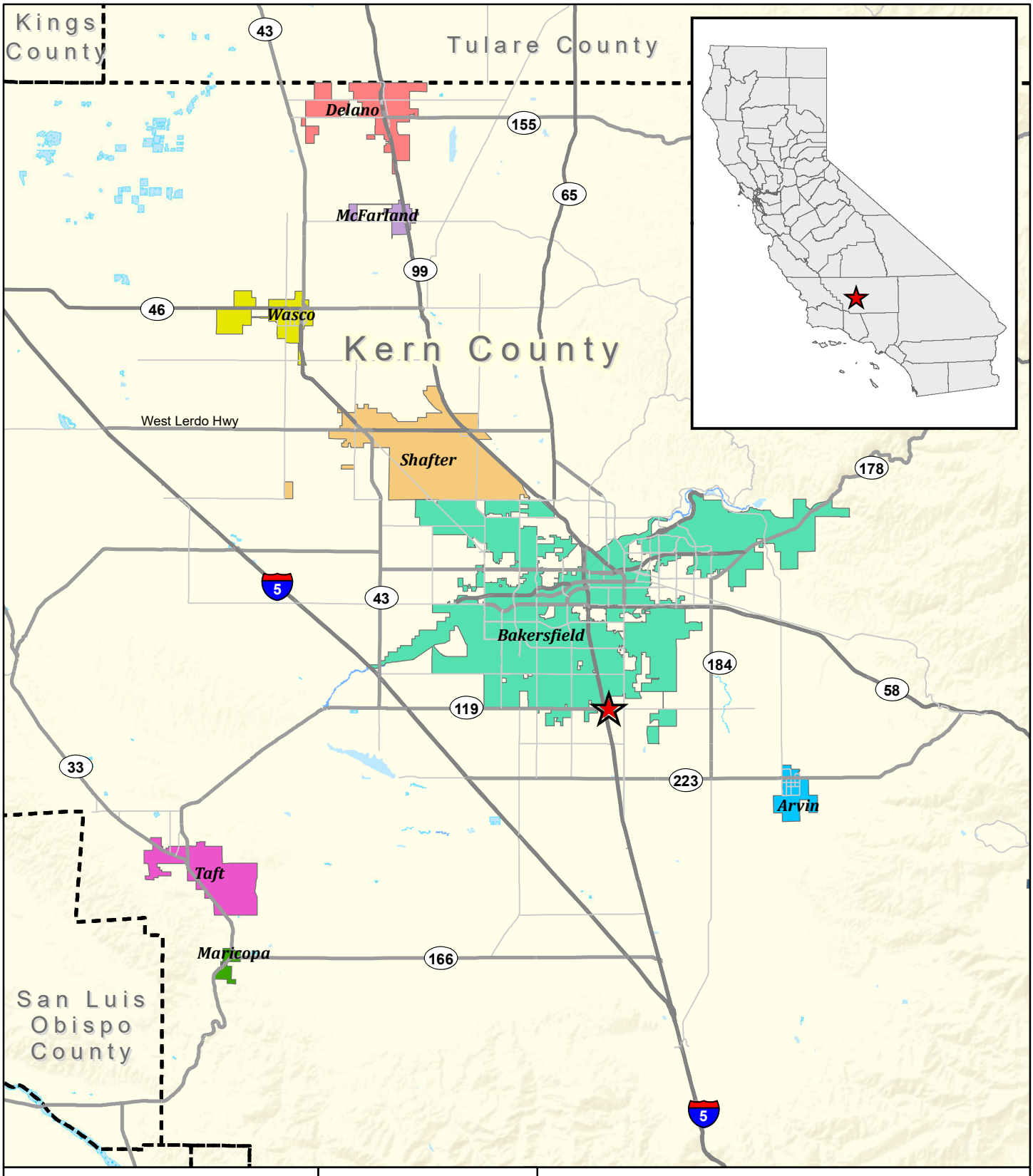
1.4—Standard Conditions and Mitigation Measures Applied to the Project

Mitigation measures beyond compliance with mandatory regulations were required to demonstrate that the project would have less than significant for health risk impacts.

MM-AIR-1 Prior to commencing operations, the project operator shall install signage near the fueling area and in truck parking areas that are clearly visible to drivers indicating the following:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).

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Legend

- Project Location
- County Boundary

Sources: Kern County GIS; Open StreetMap. Map date: October 4, 2019.

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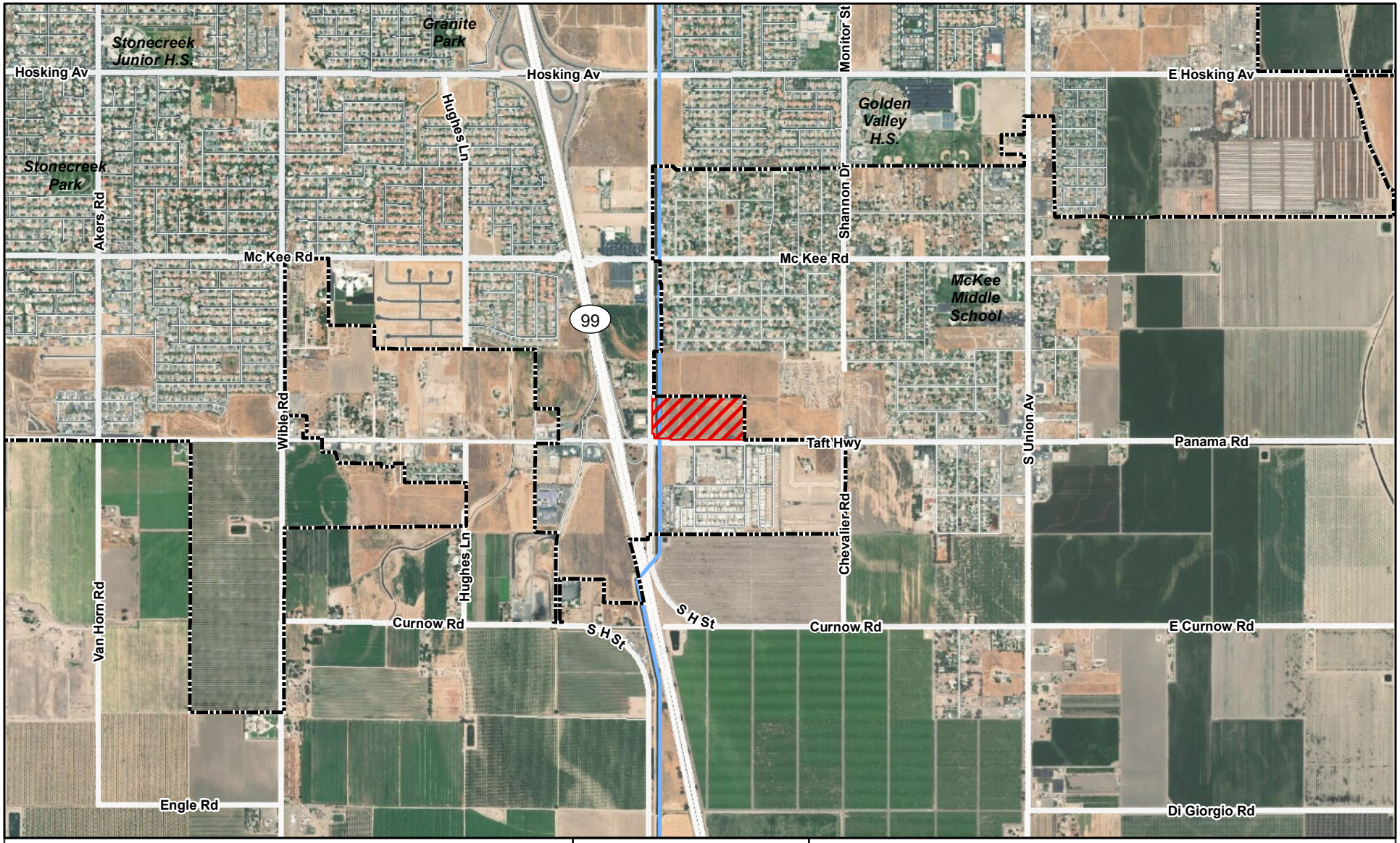
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ELMER F. KARPE, INC.
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
KARPE DEVELOPMENT

Figure 1. Regional Location Map

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Legend

- Bakersfield City Limits
- Project Area
- Kern Island Canal

Source: Kern County; ArcGIS Online World Imagery Map Service. Map date: October 4, 2019.

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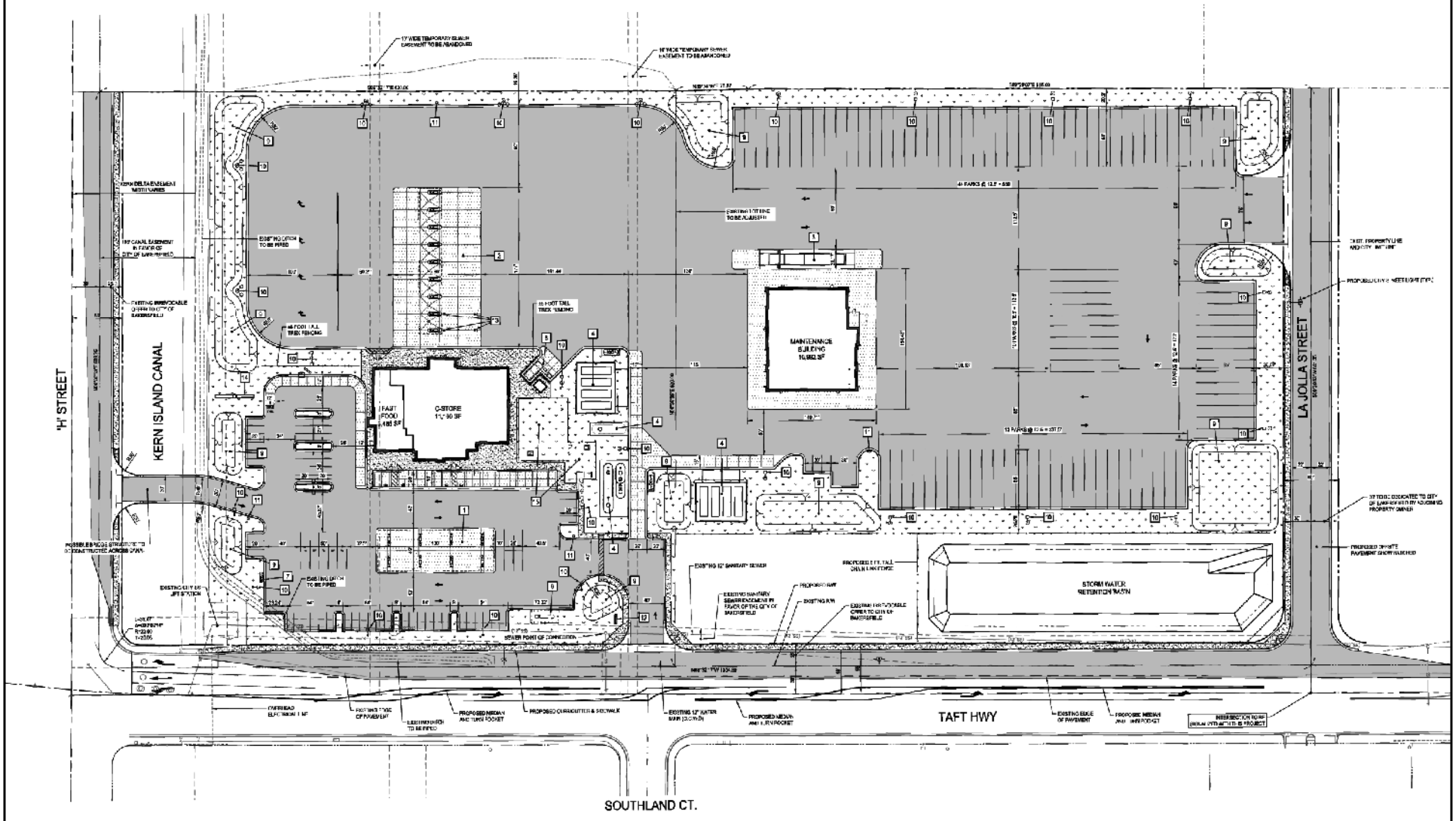
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ELMER F. KARPE, INC.
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
KARPE DEVELOPMENT

Figure 2. Vicinity Map

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ELMER F. KARPE, INC.
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT
KARPE DEVELOPMENT

Figure 3. Site Plan

Source: Lane Engineers, Inc. Map date: October 4, 2019.

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SECTION 2: AIR QUALITY SETTING

2.1—Environmental Setting

Air quality impacts are both local and regional. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season. The project is located in the San Joaquin Valley Air Basin (Air Basin), which experiences some of the most challenging environmental conditions for air quality in the nation. The following section describes these conditions as they pertain to the Air Basin. The information in this section is primarily from the SJVAPCD's GAMAQI (SJVAPCD 2015a).

2.1.1 - San Joaquin Valley Air Basin

Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong, low-

level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and PM_{10}.

2.2—Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

2.2.1 - Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014). The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide (NO_2)
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2016).

2.2.2 - California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are less

stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

2.2.3 - Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

2.2.4 - Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1.

Table 1: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_X, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.070 ppm[f]			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and result in PM-related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide (NO_2) forms quickly from NO_X emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human-caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility-reducing particles	8 Hour	See note below[d]				

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide.

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
				headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.		Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no state or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Table 1 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources

Notes:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour NO_2 national standard, the 3-year average of the annual 98^{th} percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2009a; U.S. Environmental Protection Agency 2003, 2009a, 2009b, 2010, 2011, 2012a and 2012b; National Toxicology Program 2011 and 2016.
Source of standards: California Air Resources Board 2013a.

Several pollutants listed in Table 1 are not addressed in this analysis. Analysis of lead, hydrogen sulfide, sulfates, and vinyl chloride are not included in this report because no new sources of these pollutant emissions are anticipated with the project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as PM_{10} and $PM_{2.5}$.

Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants. Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and hazardous air pollutants in California.

Exposures to TACs emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur very soon after a person inhales a TAC. These immediate effects may be minor, such as watery eyes, or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality—2009 Edition (ARB 2009b) presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality. As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provides emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the SJVAB from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to 6 tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source (ARB 2013b).

Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present. No naturally occurring asbestos is located near the project site.

2.3—Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 2 summarizes 2016 through 2018 published monitoring data, which is the most recent three-year period available. Data were obtained from the closest air monitoring station with data available. The table displays data from the Bakersfield Municipal Airport monitoring station Avenue monitoring station (located approximately 4.6 miles north of the project site), and the

Bakersfield California Avenue monitoring station (located approximately 6.6 miles northwest of the project site), which are the closest monitoring stations to the project site. The data show that during the past few years, the project area has exceeded the standards for ozone (state and national), PM_{10} (state), and $PM_{2.5}$ (national). The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Kern County or the San Joaquin Valley Air Basin was available for CO or SO_2. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 2: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2016	2017	2018
Ozone[1]	1 Hour	Max 1 Hour (ppm)	**0.102**	**0.118**	**0.111**
		Days > State Standard (0.09 ppm)	8	9	9
Ozone[1]	8 Hour	Max 8 Hour (ppm)	**0.093**	**0.101**	**0.098**
		Days > State Standard (0.07 ppm)	66	57	59
		Days > National Standard (0.070 ppm)	63	55	54
Carbon monoxide (CO)	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
Nitrogen dioxide (NO_2)[1]	Annual	Annual Average (ppm)	0.011	0.012	0.011
	1 Hour	Max 1 Hour (ppm)	0.0581	0.0625	0.0571
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide (SO_2)	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM_{10})[2]	Annual	Annual Average (µg/m^3)	41.2	42.6	42.1
	24 hour	24 Hour (µg/m^3)	**90.9**	**138.0**	**136.1**
		Days > State Standard (50 µg/m^3)	121.4	98.7	ID
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$)[2]	Annual	Annual Average (µg/m^3)	**14.7**	**15.9**	**17.6**
	24 Hour	24 Hour (µg/m^3)	**66.4**	**101.8**	**98.5**
		Days > National Standard (35 µg/m^3)	25.5	30.2	40.3

Notes:
> = exceed ppm = parts per million µg/m^3 = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Bold = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Bakersfield Municipal Airport
[2] Bakersfield California Avenue
Source: California Air Resources Board 2017a.

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3 provides a description of the health impacts of ozone at different concentrations.

Table 3: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI 51–100—Moderate Concentration 55–70 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Unusually sensitive individuals may experience respiratory symptoms.
	Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.
AQI 101–150—Unhealthy for Sensitive Groups Concentration 71–85 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.
AQI 151–200—Unhealthy Concentration 86–105 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
AQI 201–300—Very Unhealthy Concentration 106–200 ppb	**Sensitive Groups**: Children and people with asthma are the groups most at risk.
	Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.
	Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.
Source: Air Now 2016.	

The AQI for the 8-hour ozone standard is based on the current NAAQS of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the project area experienced no days in the last three years that would be categorized as very unhealthy (AQI 201–250), and as many as 172 days that were unhealthy (AQI 151–200) or unhealthy for sensitive groups (AQI 101–150), violating the 70-ppb standard as measured at the Bakersfield Municipal Airport monitoring station. The highest reading was 101 parts per billion (ppb) in 2017 (AQI 190), compared with the 105-ppb cutoff point for unhealthy (AQI 200). The most days over the standard were 63 days in 2016.

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m^3. An AQI of 101 to 105 or 35.5-55.4 µg/m^3 is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the project exceeded the standard on approximately 96 days in the three-year period spanning from 2016 to 2018. People with respiratory or heart disease, the elderly and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when $PM_{2.5}$ concentration ranges from 55.4 to 150.4 µg/m^3. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Bakersfield California Avenue monitoring station in the last three years was 101.8 µg/m^3 (AQI 175) in 2017. At this concentration, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly, and increased respiratory effects in general population would occur. People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level. The relationship of the AQI to health effects in shown Table 4.

Table 4: Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
AQI 51–100—Moderate Concentration 12.1–35.4 µg/m^3	**Sensitive Groups**: Some people who may be unusually sensitive to particle.
	Health Effects Statements: Unusually sensitive people should consider reducing prolonged or heavy exertion.
	Cautionary Statements: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.
AQI 101–150—Unhealthy for Sensitive Groups Concentration 35.5–55.4 µg/m^2	**Sensitive Groups**: Sensitive groups include people with heart or lung disease, older adults, children, and teenagers.
	Health Effects Statements: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly.

Table 4 (cont.): Air Quality Index and Health Effects of Particulate Pollution

Air Quality Index/ $PM_{2.5}$ Concentration	Health Effects Description
	If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
AQI 151–200—Unhealthy Concentration 55.5–150.4 µg/m^3	**Sensitive Groups**: Everyone
	Health Effects Statements: Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities.
AQI 201–300—Very Unhealthy Concentration 150.5–250.4 µg/m^3	**Sensitive Groups**: Everyone
	Health Effects Statements: Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population.
	Cautionary Statements: Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better.
Source: Air Now 2016.	

2.3.1 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 5. The Air Basin is designated nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

Table 5: San Joaquin Valley Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone—One Hour	Nonattainment/Severe	No Standard
Ozone—Eight Hour	Nonattainment	Nonattainment/Extreme
Carbon monoxide	Attainment/Unclassified	Merced, Madera, and Kings Counties are unclassified; others are in Attainment
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
Lead	Attainment	No Designation/Classification
Source of State status: California Air Resources Board (ARB 2013c). Source of National status: U.S. Environmental Protection Agency (EPA 2016a). Source of additional status information (SJVAPCD 2017a).		

2.4—Air Quality Plans and Regulations

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the SJVAPCD at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards—also known as the federal standards described earlier.

A State Implementation Plan (SIP) is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares their federal attainment plan, which is sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The ARB then submits the SIP to the EPA for approval. After reviewing submitted SIPs, the EPA proposes to approve or disapprove all or part of each plan. The public has an opportunity to comment on the EPA's proposed action. The EPA considers public input before taking final action on a state's plan. If EPA approves all or part of a SIP, those control measures are enforceable in federal court. If a state fails to submit an approvable plan or if the EPA disapproves a plan, the EPA is required to develop a federal implementation plan. The SIP approval process often takes several years. The most recent federally approved attainment plans for the SJVAPCD are the 2007 8-Hour Ozone Attainment Plan and the 2012 $PM_{2.5}$ Plan for the 2006 $PM_{2.5}$ standard.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

2.4.1 - California Regulations

Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles (ARB 2012a).

On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013b).

ARB Truck and Bus Regulation

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015a).

ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxide (NO_X) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

ARB Regulation for Consumer Products

The ARB Consumer Products Regulation was last amended in January 2015. The ARB regulates the VOC content of a wide variety of consumer products sold and manufactured in California. The purpose of the regulation is to reduce the emission of ozone precursors, TACs, and GHG emissions in products that are used by homes and businesses. The regulated products include but are not limited to solvents, adhesives, air fresheners, soaps, aromatic compounds, windshield cleaners, charcoal lighter, dry cleaning fluids, floor polishes, and general cleaners and degreasers (ARB 2015b)

ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. The project includes no demolition. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading

operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the southeast Fresno area.

Diesel Risk Reduction Plan

The ARB's Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).

2.4.2 - San Joaquin Valley Air Pollution Control District

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29 million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years (EPA 2016b).

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board

adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

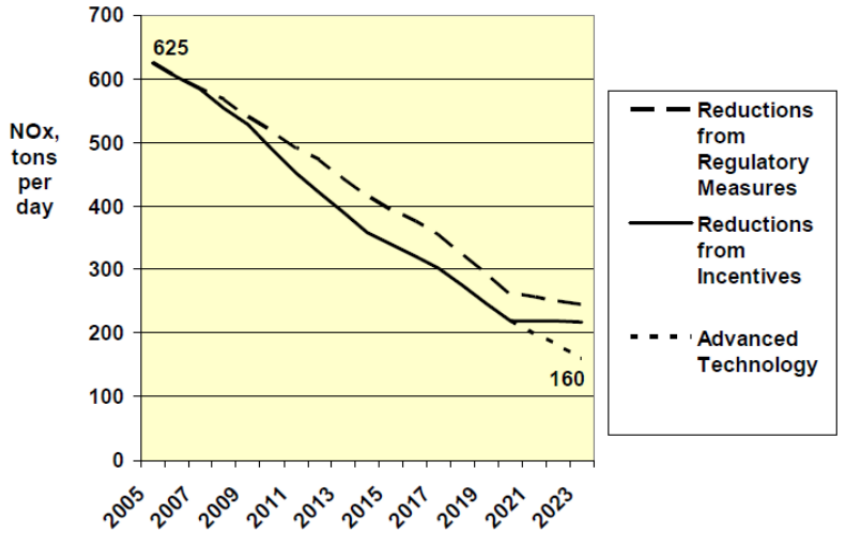
The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of NO_X and a 25 percent reduction of reactive organic gases (ROG). Figure 4 displays the anticipated NO_X reductions attributed in the 2007 Ozone Plan (Source: 2007 Ozone Plan). The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

The Air Basin is designated an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to EPA on August 24, 2016. The comprehensive strategy in this plan will reduce NO_X emissions by over 60 percent between 2012 and 2031, and will bring the San Joaquin Valley into attainment of the EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031 (SJVAPCD 2018a). To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The new standard will require the SJVAPCD to prepare a new attainment to achieve the more stringent emission level within 20 years from the effective date of designation (EPA 2018).

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

Figure 4: San Joaquin Valley NO_X Emissions Forecast



Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for PM_{10}. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the PM_{10} standard, the District adopted a PM_{10} Attainment Demonstration Plan (Amended 2003 PM_{10} Plan and 2006 PM_{10} Plan), which has an attainment date of 2010. The District adopted the 2007 PM_{10} Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's PM_{10} standard. The EPA designated the valley as an attainment/maintenance area for PM_{10} on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified NO_X and SO_2as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013 (SJVAPCD 2012). This

plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015—will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020 (SJVAPCD 2015b).

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment (SJVAPCD 2017b).

The SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan provides a combined strategy to address the EPA federal 1997 annual $PM_{2.5}$ standard of 15 µg/m³ and 24-hour $PM_{2.5}$ standard of 65 µg/m³; the 2006 24-hour $PM_{2.5}$ standard of 35 µg/m³; and the 2012 annual $PM_{2.5}$ standard of 12 µg/m³. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable (SJVAPCD 2018b).

SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include but are not limited to the following:

Rule 2201—New and Modified Stationary Source Review Rule. The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards. Permits may be required if the project includes a diesel emergency generator.

Rule 4002—National Emissions Standards for Hazardous Air Pollutants. The purpose of the rule is to incorporate the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations to protect the health and safety of the public from hazardous air pollutants, such as asbestos.

Rule 4102—Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials. This rule is enforced on a complaint basis.

Rule 4601—Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling. Only compliant components are available for purchase in the San Joaquin Valley.

Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If

asphalt paving will be used, then the paving operations will be subject to Rule 4641. This regulation is enforced on the asphalt provider

Rule 4621—Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants. The purpose of this rule is to limit VOC emissions from stationary storage containers. The project's fuel storage tanks will comply with this rule.

Rule 4622—Gasoline Transfer into Motor Vehicle Fuel Tanks. The purpose of this rule is to limit emissions of gasoline vapors from the transfer of gasoline into motor vehicle fuel tanks. The fuel pumps will utilize vapor recovery systems that comply with this rule.

Regulation VIII—Fugitive PM_{10} Prohibitions. Rules 8011–8081 are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

CEQA

The District has three roles under CEQA:

1. **Lead Agency:** Responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.
2. **Responsible Agency:** The discretionary authority of a responsible agency is more limited than a lead agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the lead agency for preparation of environmental documents for land use projects that also have discretionary air quality permits, unless no document is prepared by the lead agency and potentially significant impacts related to the permit are possible. The District regularly submits comments on documents prepared by lead agencies to ensure that District concerns are addressed.
3. **Commenting Agency:** The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The District also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance, as well as state regulations to control air pollution, is an overall improvement in the Air Basin. In particular, the District's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data,

analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.

2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

2.4.3 - Local

The City of Bakersfield adopted its Metropolitan Bakersfield General Plan in December 2002 (City of Bakersfield 2002). The applicable air quality goals and policies from the Conservation Element are listed below.

Air Quality Goals and Policies

Goals:

- **Goal 1.** Promote air quality that is compatible with health, wellbeing, and enjoyment of life by controlling point sources and minimizing vehicular trips to reduce air pollutants.
- **Goal 2**. Continue working toward attainment of Federal, State, and Local standards as enforced by the San Joaquin Valley Air Pollution Control District.
- **Goal 3.** Reduce the amount of vehicular emissions in the planning area.
- **Goal 4.** Reduce air pollution associated with agricultural activities.

Policies:

- **Policy 1**. Comply with and promote SJVAPCD control measures regarding reactive organic gases (ROG). Such measures are focused on: (a) steam driven well vents, (b) Pseudo-cyclic wells, (c) natural gas processing plant fugitives, (d) heavy oil test stations, , (e) light oil production fugitives, (f) refinery pumps and compressors, and (g) vehicle inspection and maintenance.
- **Policy 2**. Encourage land uses and land use practices which do not contribute significantly to air quality degradation.
- **Policy 3**. Require dust abatement measures during significant grading and construction operations.
- **Policy 4**. Consider air pollution impacts when evaluating discretionary permits for land use proposals. Consideration should include:
  A. Alternative access routes to reduce traffic congestion.
  B. Development phasing to match road capacities.
  C. Buffers including increased vegetation to increase emission dispersion and reduce impacts of gaseous or particulate matter on sensitive uses.

- **Policy 5**. Consider the location of sensitive receptors such as schools, hospitals, and housing developments when locating industrial uses to minimize the impact of industrial sources of air pollution.
- **Policy 6**. Participate in alternative fuel programs.
- **Policy 7**. Participate in regional air quality studies and comprehensive programs for air pollution reduction.
- **Policy 9**. Promote public education regarding air quality issues and alternative transportation.
- **Policy 10**. Implement Transportation System Management Program and for Metropolitan Bakersfield to improve traffic flow, reduce vehicle trips, and increase street capacity.
- **Policy 11**. Improve the capacity of the existing road system through improved signalization, more right turn lanes and traffic control systems.
- **Policy 23**. Encourage the provision of shower and lock facilities by employers, for employees who bicycle or jog to work.
- **Policy 29**. Encourage the use of alternative fuel and low or zero emission vehicles.

2.4.4 - Existing Sources of Toxic Emissions

No existing sources were identified that exceed ARB recommendations in its Air Quality Land Use Handbook for siting sensitive land uses impact the project.

2.4.5 - ARB Air Quality Land Use Handbook

Table 6 lists the following ARB advisory recommendations that address the issue of siting "sensitive land uses" near specific sources of air pollution (ARB 2005):

- High traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

The analysis examines the area around the site to determine if potential sources of TAC emissions may impact the project, based on the ARB recommended screening distances.

Table 6: Recommendations on Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.

Table 6 (cont.): Recommendations on Siting New Sensitive Land Uses

Source Category	Advisory Recommendations
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.
Note: These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.	

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SECTION 3: CLIMATE CHANGE SETTING

3.1—Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a). The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its incremental contribution of GHGs—and when combined with the cumulative increase of all other sources of GHGs—constitute potential influences on global climate change.

3.1.1 - Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009):

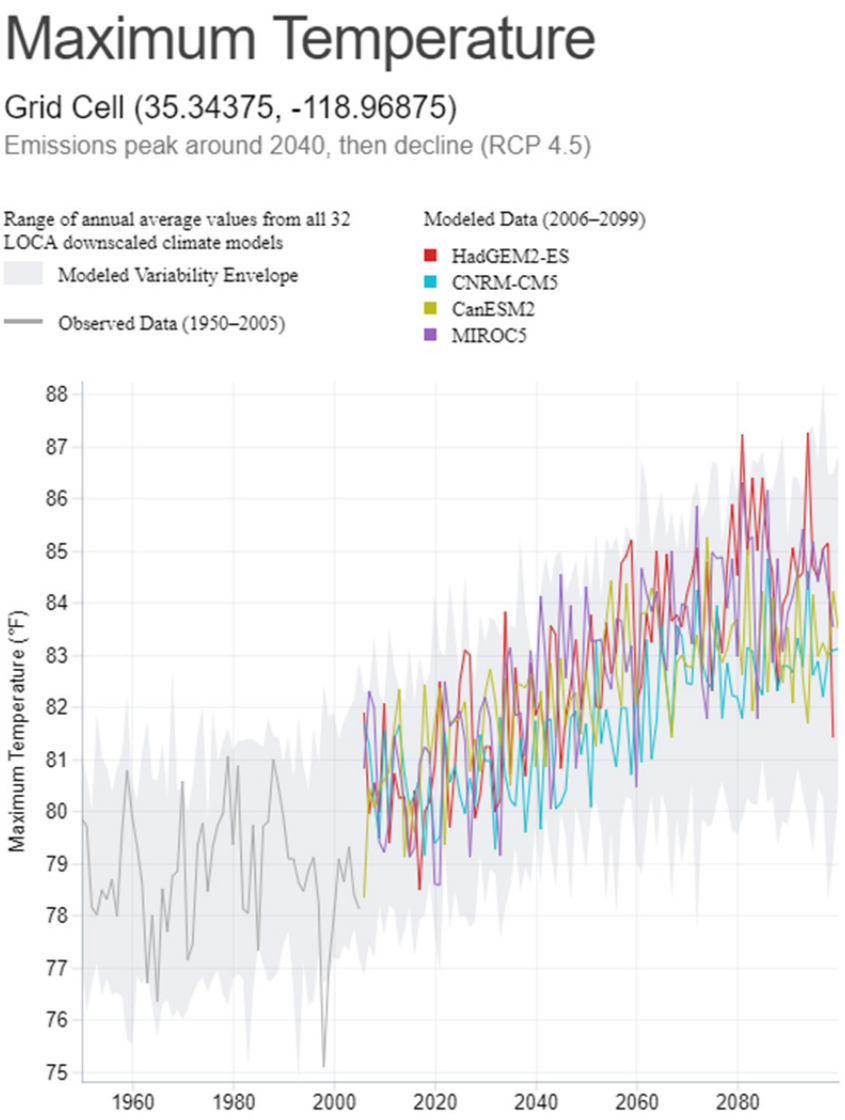
- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Consequences of Climate Change in the Bakersfield Area

Figure 5 displays a chart of measured historical and projected annual mean temperatures in the City of Bakersfield area. As shown in the figure, temperatures are expected to rise in the low and high GHG emissions scenarios. The results indicate that mean temperatures are predicted to increase by 4.7 degrees Fahrenheit (°F), based on the results of four climate models (CalAdapt 2019).

Figure 5: Observed and Projected Temperatures for Climate Change in the Bakersfield Area



Source: CalAdapt 2019

Water Supply

The Greenfield County Water District would provide water for the project. The District relies on groundwater for potable water supplies. The rate of groundwater recharge could decline if climate change were to result in reduced snowpack in the Sierra Nevada.

Wildfires

The project site is within an urbanizing area with limited fuels that would be subject to a wildfire. Foothill and mountain areas located to the east of the Bakersfield area are subject to wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas.

Human Health Effects of GHG Emissions

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States.

Potential effects of climate change on public health include:

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate-Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (EPA 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (CDC 2010 and OSHA 2003).

3.2—Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, NO_X, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For

example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, CO_2.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. CO_2, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO_2. For example, CH_4's warming potential of 25 indicates that CH_4 has 25 times greater warming effect than CO_2 on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include CO_2, CH_4, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 7. A seventh GHG, nitrogen trifluoride, was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. The global warming potential amounts are from IPCC Fourth Assessment Report (AR4). The new amounts have been incorporated into the CalEEMod 2016.3.2 used in this analysis.

Table 7: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 124 to 14,800.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.

Table 7 (cont.): Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 7,390 to 12,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 22,800.	This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Nitrogen trifluoride	Nitrogen trifluoride (NF_3) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200.	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.
Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b.		

The State has begun addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the governor on September 14, 2014 required the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinated with other state agencies and districts to develop measures. The Short-Lived Climate Pollutant Strategy was approved by the ARB on March 24, 2017. The strategy calls for reductions of 50 percent from black carbon, 40 percent from methane, and 40 percent from HFCs from the 2030 Business as Usual (BAU) inventory for these pollutants (ARB 2017b).

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 7 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy (ARB 2015c).

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen (NO_X) on a regional scale and CH_4 on a hemispheric scale will be subject of the strategy (ARB 2015c).

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—

particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

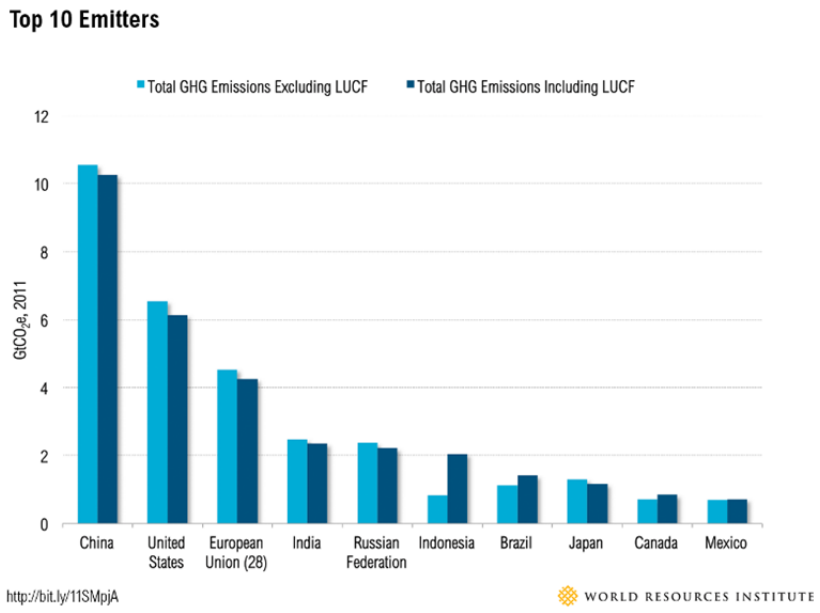
Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources (ARB 2015d). Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere (NASA 2015b).

3.2.1 - Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 6, China was the largest GHG emitter with over 10 billion metric tons of CO_2e, and the United States was the second-largest GHG emitter with over 6 billion metric tons of CO_2e (WRI 2014).

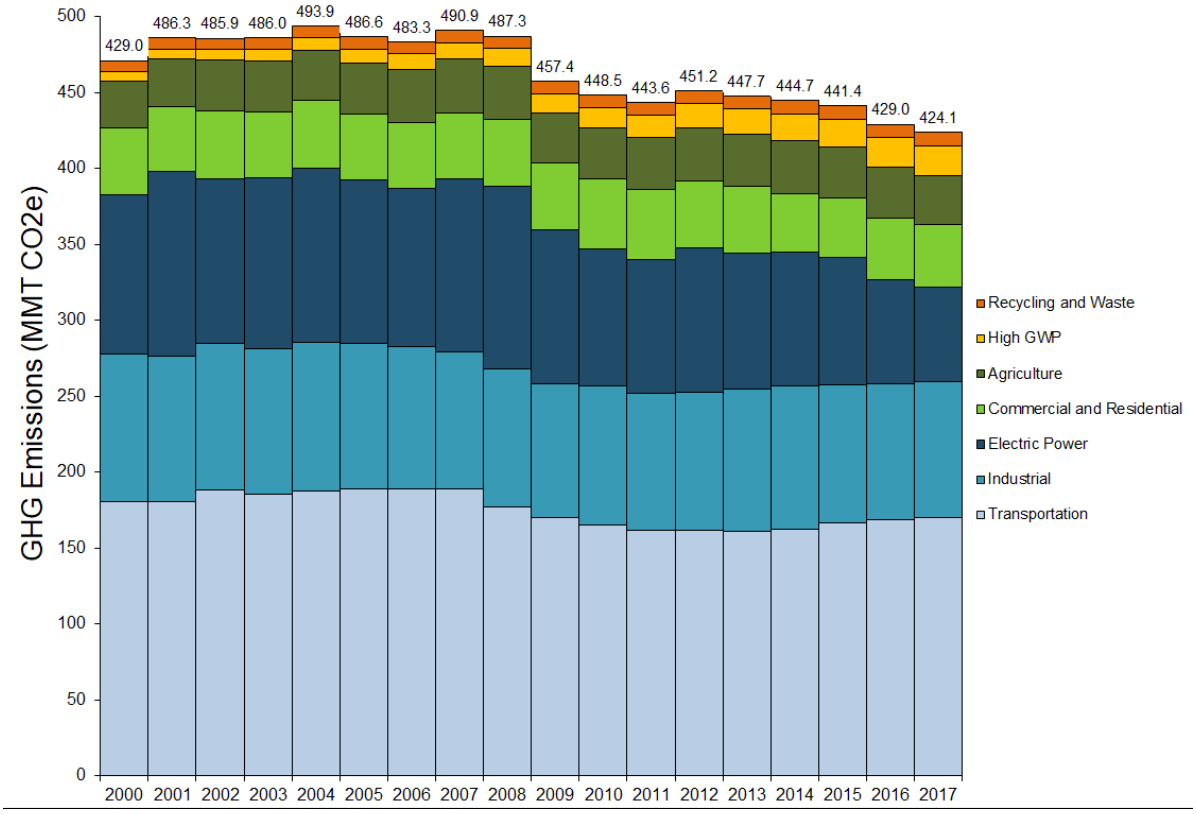
Figure 6: Greenhouse Gas Emissions by Geographic Area



Source: WRI 2014.

Figure 7 shows the contributors of GHG emissions in California between years 2000 and 2017 by Scoping Plan category. The main contributor was transportation. The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 424.1 MMTCO$_2$e in 2017 (ARB 2018a).

Figure 7: Greenhouse Gas Emission Trends by Scoping Plan Category in California



Source: ARB 2018a.

3.3—Regulatory Environment

3.3.1 - International

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention). On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the

Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the five-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, along with leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business, and civil society announced actions in areas that would have the greatest impact on reducing emissions, including: climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

Paris Agreement. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating in a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;

- Establish binding commitments by all parties to make "nationally determined contributions" (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and "progress made in implementing and achieving" their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will "represent a progression" beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address "loss and damage" resulting from climate change, which explicitly will not "involve or provide a basis for any liability or compensation;"
- Require parties engaging in international emissions trading to avoid "double counting;" and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country's NDC (C2ES 2015a).

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord (White House 2017). The earliest possible effective withdrawal date by the United States cannot be before November 4, 2020. California remains committed to combating climate change through programs designed to reduce GHGs.

3.3.2 - Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

Greenhouse Gas Endangerment. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding the EPA Administrator findings (EPA 2009c).

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012b). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO_2 in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO_2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO_2 emissions from the 2014 to 2018 model years.

Mandatory Reporting of Greenhouse Gases. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule,

which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units. As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. President Trump signed the Executive Order on Energy Independence (E.O. 13783), which calls for a review of the Clean Power Plan. On October 16, 2017, the EPA issued the proposed rule Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units an Energy Independence (EPA 2017).

Cap-and-Trade. Cap-and-trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG cap-and-trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap-and-trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the cap-and-trade program (C2ES 2015).

3.3.3 - California

Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008a). At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010a).

Progress in Achieving AB 32 Targets and Remaining Reductions Required

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is evident in updated emission inventories prepared by ARB, which showed that the State inventory dropped below 1990 levels for the first time in 2016 (ARB 2018b). The 2017 Scoping Plan Update includes projections indicating that the State will meet or exceed the 2020 target with adopted regulations (ARB 2017c).

ARB 2008 Scoping Plan. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and-trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions (ARB 2008).

Cap-and-Trade Program. The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in

November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's cap-and-trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015 (ARB 2015d).

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative (ARB 2014b).

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014b).

AB 398. The Governor signed AB 398 on July 25, 2017 to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CAR 2017).

SB 32. The Governor signed SB 32 on September 8, 2016. SB 32 now gives ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
   - Maintaining existing GHG standards for light- and heavy-duty vehicles.
   - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
   - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
   - Improve freight system efficiency.
   - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
   - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
   - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
   - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
   - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
   - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
   - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

8. 20 percent reduction in greenhouse gas emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink (ARB 2017c).

SB 375—The Sustainable Communities and Climate Protection Act of 2008. SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375—as codified in Public Resources Code Section 21159.28—states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

The Kern COG target is a 5 percent reduction in 2020 and a 10 percent reduction in 2035 (Kern COG 2018a).

AB 1493 Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011 (ARB 2013d).

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant (ARB 2013e).

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California (ARB 2017d).

SB 1368—Emission Performance Standards. In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

SB 1078—Renewable Electricity Standards. On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020 The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

SB 350—Clean Energy and Pollution Reduction Act of 2015. The legislature approved and the governor then signed SB 350 on October 7, 2015, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

SB 100- California Renewables Portfolio Standard Program. The Governor approved SB 100 on September 10, 2018. The legislation revised the Renewable Portfolio Standard goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 (California Leginfo 2018).

SBX 7-7—The Water Conservation Act of 2009. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order B-30-15. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target

of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the Executive Order.

Executive Order S-01-07—Low Carbon Fuel Standard. The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015 (ARB 2015e).

Executive Order S-13-08. Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-55-18. Executive Order B-55-18 issued by Governor Brown on September 10, 2018 establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. The executive order directs ARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal (Brown 2018).

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations including lighting, air conditioning, and most home appliances. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2018a).

Title 24 Energy Efficiency Standards. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2016 Building Energy Efficiency Standards went into effect on January 1, 2017 (CEC 2016). The 2019 Building Energy Efficiency Standards are scheduled to go into effect on January 1, 2020 (CEC 2018b).

Title 24 California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).

- **Designated parking**. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste**. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  1. The installation of water-conserving fixtures or
  2. Using nonpotable water systems (5.303.4).
- **Water use savings.** Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters.** Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency.** Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control.** Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning.** Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

Model Water Efficient Landscape Ordinance. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies

SB 97 and the CEQA Guidelines Update. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006—in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010. The Natural Resources Agency adopted additional amendments related to greenhouse gases in the 2019 CEQA Guidelines Update adopted on December 28, 2018.

The 2010 CEQA Amendments along with the 2018 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

Section 15064.4(c) states that a lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take

into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2018 CEQA Guidelines include the following discussion regarding thresholds of significance.

> (d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all of the following:
>
> (1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;
> (2) adopted for the purpose of environmental protection;
> (3) addresses the environmental effect caused by the project; and,
> (4) applies to the project under review.

In addition, the 2018 amendments revised Appendix G Checklist questions to include a new question specifically on energy conservation.

CEQA emphasizes that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

California Supreme Court GHG Ruling

A November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).

- **Compliance with Regulatory Programs or Performance Based Standards**. "A lead agency might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].)" (p. 26).
- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs)**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

3.3.4 - San Joaquin Valley Air Pollution Control District

Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.

- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources, and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce GHG emissions. The Best Performance Standards (BPS) have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, BPS means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified BPS for the following sources: boilers; dryers and dehydrators; oil and gas extraction; storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required.

San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx website as of this writing (CAPCOA 2018).

Rule 2301

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

Kern Council of Governments

Regional Transportation Plan

The Kern Council of Governments (Kern COG) is the Regional Transportation Planning Agency (RTPA) for the Kern County region. The Kern COG Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS) includes the County's Sustainable Community Strategy to comply with SB 375. The RTP is a planning document prepared in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. The SCS is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from autos and light trucks. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- SB 375 required the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including Kern COG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Kern County is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. (Kern COG 2018a).
- SB 375 required the preparation of an SCS. Kern COG included a SCS that specifies how the GHG emission reduction target set by ARB will be achieved in the RTP. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by Kern COG. Chapter 4 of the 2014 RTP includes the SCS for Fresno COG. Chapter 4 of the 2018 RTP includes the current SCS.
- SB 375 streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the Kern County SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

3.3.5 - Local

The City of Bakersfield does not currently have formal GHG emissions reduction plans or recommended emissions thresholds for determining significance associated with GHG emissions from development projects.

General Plan

The 2002 Metropolitan Bakersfield General Plan does not include policies directly applicable to greenhouse gas emissions. However, the goals and policies related to improving air quality listed in Section 2.4.3 may also provide a co-benefit of reducing climate change impacts.

Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. For 2018, the target rate was 5.4 pounds per person and 14.2 pounds per employee. The City's disposal rates were well below the target rate of 4.5 pounds per person per day and 13.1 pounds per employee per day in 2018 (CalRecycle 2019).

SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

4.1—Model Selection and Guidance

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors represent the emission rate of a pollutant given the activity over time; for example, grams of NO_X per horsepower-hour or grams of NO_X per vehicle mile traveled. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed by the South Coast Air Quality Management District in cooperation with other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

The modeling follows District guidance where applicable from its GAMAQI. The models used in this analysis are summarized as follows:

- Construction emissions: CalEEMod, version 2016.3.2
- Operational emissions: CalEEMod, version 2016.3.2

4.2—Air Pollutants and GHGs Assessed

4.2.1 - Criteria Pollutants Assessed

The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_X)
- Carbon monoxide (CO)
- Sulfur dioxide (SO_2)
- Particulate matter less than 10 microns in diameter (PM_{10})
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the project would emit ozone precursors ROG and NO_X. However, the project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors. Other criteria pollutants such as vinyl chloride, hydrogen sulfide, lead, and sulfates were not included because of their low levels of emissions from the project.

As noted previously, the project would emit ultrafine particles. However, there is currently no standard separate from the $PM_{2.5}$ standards for ultrafine particles and there is no accepted methodology to quantify or assess the significance of such particles.

4.2.2 - Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include: carbon dioxide, methane, NO_X, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as carbon dioxide, methane, and NO_X.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of DPM from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (IPCC 2007a).

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

4.3—Construction Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

4.3.1 - Project Schedule

The project was assumed to begin construction in April 2021 with project operations commencing in January 2022. The project was assumed to be completed in a single phase.

The CalEEMod default schedule for building construction was adjusted to reflect the shorter project construction schedule. Because the expected schedule and the default schedule differ, the equipment in the building construction phase was adjusted to retain the default horsepower-hours.

The analysis uses CalEEMod default assumptions for the equipment used during construction. CalEEMod default construction equipment and equipment activity are based on surveys of

construction projects of various sizes conducted for development in Southern California and may overstate equipment use for larger project sites in regions outside of Southern California and should be considered highly conservative. The modeling assumptions can be reviewed in the modeling results included in Appendix A of this report.

4.3.2 - Construction Equipment Emission Factors

CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, age, horsepower, and equipment emission control level or tier from which rates of emissions are developed. The CalEEMod default equipment assumptions were used in this analysis for the estimation of emissions from on-site construction equipment. CalEEMod's off-road emission factors and load factors are from the ARB OFFROAD model.

4.3.3 - Demolition

The project would not require any demolition of existing structures.

4.3.4 - Site Preparation

Site preparation involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading. During site preparation, emissions are generated from the use of diesel construction equipment. Fugitive dust is generated during soil-disturbing activities and truck loading and unloading.

4.3.5 - Grading

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber-tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Therefore, the following acres are the total quantities disturbed per day, per phase, according to the acreage disturbed quantities listed above:

- Site preparation = 1.03 acres per day
- Grading = 2.06 acres per day

It was assumed soil would be balanced on-site so no soil import or export would be required.

4.3.6 - Building Construction, Paving, and Architectural Coatings

The analysis uses the default modeling assumptions from CalEEMod for construction equipment during building construction, paving, and application of architectural coatings. As previously discussed, the equipment hours for the building construction phases were adjusted to retain the

CalEEMod default-generated horsepower hours. The coatings used for the project are required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule required flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012 for an average rate of 65 g/l. Most of the coatings used for non-residential painting are flat paints.

4.3.7 - Construction Off-site Trips

Worker trips are accounted for during the construction phases, based on 1.25 trips per piece of equipment (the CalEEMod default). The CalEEMod default worker trip length of 10.8 miles was retained. The CalEEMod default vehicle fleet (LD Mix) was used for employee trips.

Vendor trips for the building construction phase are calculated from a study performed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) based on land use and size. The CalEEMod defaults for vendor trips, trip length, and vehicle fleet (Heavy Duty Truck Vehicle Fleet Mix) were used.

4.4—Operation

Operational emissions are those emissions that occur when the project is occupied by the future residents. The major sources are summarized below.

4.4.1 - Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project residences.

Project trip generation rates were obtained from the project traffic study prepared by Ruettgers & Schuler Civil Engineers. The traffic study uses data from a study prepared for similar truck stops from six California location.

Highway commercial uses such as truck stops provide services primarily to travelers in route to other destinations. In this case the trips are not new trips, but are considered pass-by and diverted link trips. A pass-by trip accounts for vehicles already on the roadway network that stop at the project site as they pass-by. A diverted link trip is a trip that requires a short travel distance from the traveler's route to access the project site. The traffic study assumes that 15 percent of project trips are pass-by trips from Taft Highway and 88 percent are diverted link trips from nearby State Route 99. The remaining trips are assumed to travel from the local area.

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet is not land use specific. The CalEEMod default fleet mix is the assumed to be the same for each land use even though the amount of trucks varies widely for different land uses. For this analysis the fleet mix is based on Caltrans fleet percentages for each truck type and truck specific trip generation rates for similar projects. Separate model runs were prepared for trucks and passenger vehicles.

4.4.2 - Architectural Coatings (Painting)

Paints release VOC emissions during application and drying. The buildings in the project would be repainted on occasion. The project is required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule required flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012 for an average rate of 65 g/l. Most of the coatings used for non-residential painting are flat paints.

4.4.3 - Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. "Consumer Product" means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings (ARB 2011). The default emission factor developed for CalEEMod was used.

4.4.4 - Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

4.4.5 - Electricity

Electricity used by the project (for lighting, etc.) would result in emissions from the power plants that would generate electricity distributed on the electrical power grid. Electricity emissions estimates are only used in the GHG analysis. CalEEMod was used to estimate these emissions from the project.

Electricity Emission Factor

The default CalEEMod emission factors for Pacific Gas & Electric (from the CEC's year 2006 data) are as follows:

- Carbon dioxide: 641.35 pounds per megawatt hour (lbs/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

It is assumed that the Renewable Electricity Standards would have taken effect by 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. Pacific Gas & Electric provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. The Pacific Gas and Electric Company (PG&E) emissions factor for 2020 for CO_2 is provided below. No projections have been made by PG&E for later years, so the rate is assumed to remain constant through 2030. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard.

- Carbon dioxide: 290 lbs/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

4.4.6 - Electricity Consumption

CalEEMod has three categories for electricity consumption: electricity that is impacted by Title 24 regulations, non-Title 24 electricity, and lighting. The Title 24 uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not considered as part of the building envelope energy budget, CalEEMod does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24 includes everything else such as appliances and electronics. Total electricity consumption in CalEEMod is divided into the three categories. The percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity factors. The percentages are then applied to the electricity consumption to result in the values used in the analysis.

4.4.7 - Natural Gas

The project would generate emissions from the combustion of natural gas for water heaters, heat, etc. CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. CalEEMod defaults were used.

4.4.8 - Water and Wastewater

GHG emissions are emitted from the use of electricity to pump water to the project and to treat wastewater. CalEEMod defaults were used.

4.4.9 - Refrigerants

During operation, air conditioners and refrigeration systems may leak refrigerants (hydrofluorocarbons). Hydrofluorocarbons are typically used for refrigerants, which are long-lived GHGs. The project is not expected to use large refrigeration systems with substantial volumes of refrigerants; therefore, they were not estimated.

4.4.10 - Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

4.4.11 - Vegetation

There is currently limited carbon sequestration occurring on-site from existing vegetation. The project would plant trees and integrate landscaping into the project design, which would provide carbon sequestration. However, the number of trees to be planted is unknown and data are insufficient to accurately determine the impact that existing plants have on carbon sequestration. For this analysis, it was assumed that the loss and addition of carbon sequestration that are due to the project would be balanced; therefore, emissions due to carbon sequestration were not included.

4.5—Health Risk Assessment Modeling Assumptions

A health risk assessment (HRA) was prepared to assess potential health risk impacts from the operation of the project. A HRA is a guide that helps to determine whether current or future exposures to a toxic chemical or substance in the environment could affect the health of a population. In general, risk depends on the following factors:

- Identify the toxics air contaminants (TACs) that may be present in the air;
- Estimate the amount of TACs released from all project sources using emission models;
- Estimate concentrations of TACs in air in the geographic area of concern by using air dispersion models with information about emissions, source locations, weather, and other factors; and
- Estimate the level of exposure to different concentrations of the TACs at different geographic locations and their consequential health impacts.

Thus, an HRA identifies the TACs that could affect public health, identifies the sources of the TAC emissions and quantifies their emissions, estimates where the emissions are transported by prevailing meteorological conditions, determines the extent and number of individuals exposed affected by the TACs, and assesses the consequential health impacts due to the identified exposures.

The State of California Office of Environmental Health Hazards Assessment (OEHHA) has developed methods for conducting health risk assessments. As defined under the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588 [Chapter 1252, Statutes of 1987, California Health and Safety Code Section 44306]), "A health risk assessment means a detailed comprehensive analysis prepared pursuant to Section 44361 to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure."

This HRA focused principally on estimating the impacts from diesel particulate matter (DPM) emissions from the diesel-fueled vehicles that would access the project site each day. The ARB has identified DPM as a carcinogenic substance and estimates that DPM comprises approximately 70 percent of the airborne cancer risk in California (ARB 2018c). The operation of the gasoline service station will also be a source of TAC emissions in the form of evaporative reactive organic gases (ROG), which include benzene, ethylbenzene, and naphthalene, also carcinogenic substances.

Estimates of health risk and hazards that could potentially affect nearby sensitive receptors from the emissions of DPM and ROG were made using the methodology described below in terms of emission source quantification, configurations and locations, receptor locations, air dispersion modeling, and health risk modeling.

4.5.1 - Emission Inventory Development

The first requirement to carry out the HRA involves the process of identifying and quantifying the sources of operational air emissions from the project, also termed an emission inventory. Each piece of equipment that emits is identified in terms of its location and physical characteristics (release

height, release temperature, etc.) as well as the chemical nature of the emissions. The predominant sources of emissions resulting from the operation of the project derive from the motor vehicles sources that travel to/from and within the project site each day and from evaporative ROG emissions from the fueling and storage of gasoline. These emission sources are identified below. In addition, DPM emissions would also result from the operation of transportation refrigeration units (TRUs), small diesel engines needed to transport perishable food products.

Mobile Source Emissions

Estimates of mobile source emissions are based on an emission factor and an activity level. An emission factor quantifies the amount of air emission for a specific activity, such as a gram of DPM (as PM_{10} exhaust) emitted per vehicle mile traveled or per hour of idling.

Emissions from motor vehicles can be characterized as follows:

- Combustion emissions (grams/mile or grams/hour for idling) resulting from the combustion of fuel and are the main source of DPM emissions. The ARB EMFAC mobile source emission model has the capability to provide emission rates for user defined vehicle speeds, fuel type, vehicle class, and model year.

The emissions for DPM from mobile sources are calculated as follows:

$$Emissions_{total} = \sum_{i=1}^{n} \{[VMT_i \times EF_i] + [EF_{idling} \times IdVol_i \times T_i]\}$$

Where:

$Emissions_{total}$ = total running exhaust and idling emissions summed over all vehicle classes
EF_i = running exhaust emission factor for each vehicle type at a specific vehicle speed (g/mi)
EF_{idling} = idling emission factor for each vehicle class (g/hour)
VMT_i = total number of vehicle trips by vehicle class
$IdVOL_i$ = number of idling vehicles by vehicle class
T_i = idling hours for each vehicle class (hours)
n = number of vehicle classes
$_i$ = vehicle class

Mobile Source Activity Levels

The motor vehicle activity levels were estimated using the trip information provided by the developer. The emphasis for this HRA was focused on the potential health impacts from the operation of the diesel trucks associated with the operation of the project. The number of truck trips is a required input in quantifying the level of emissions from the project's truck traffic. The project is expected to attract 600 truck trips per day based on trip generation rates for similar facilities. The number of diesel trucks associated with the operation of the project is provided in Table 8. The truck types included in this assessment are:

- Light-heavy duty trucks: GVWR <8,501 to 14,000 pounds (2 axle)
- Medium-heavy duty instate trucks: GVWR >26,000 pounds (3 axle)
- Heavy-heavy duty tractor trucks (4+ axle)

During the course of accessing the project site, trucks may require refueling, parking to access the restaurant and/or convenience store, or require an overnight stay. As a result, the project would generate mobile source emissions at several points within and near the project. The trucks are primarily diesel-powered, but a portion of the trucks are gasoline-fueled. In this assessment, the focus was on the diesel truck emissions. The emission source locations are described below. Table 8, Table 9, and Table 11 provide estimates of the various truck activities during project operations. These estimates are based on discussions with the applicant and the applicant's experience with similar facilities.

Table 8: Project Daily Diesel Truck Trips during Operation

Fleet Mix					
Vehicle	Type of Truck	% of All Trucks	% Diesel Trucks	Number of Daily Truck Trips	Number of Daily Trucks
Number of daily truck trips	All Trucks	—	—	600	300
Number of daily diesel truck trips	Light Heavy Duty 1 Light Heavy Duty 2 Medium Heavy Duty Instate Heavy-Heavy Tractor	19.9 6.1 5.0 69.0	53.7 70.4 90.0 99.9	64 26 27 414	32 13 13 207
	Total	**100.0**	**—**	**531**	**265**
Source: see Appendix C.					

On-site Vehicle Emissions

On-site travel would consist of truck travel from the project's southeast driveway (Driveway 1) to the refueling area, short-term parking for access to the restaurant and convenience store or long-term overnight parking area and then exit the project site at Driveway 1. As noted from Table 8, the proposed project would attract 265 diesel trucks per day. Of this total, 235 trucks per day would refuel in the refueling area, as noted in Table 9. Table 10 shows the long-term truck distribution for those trucks requiring an overnight stay. It was estimated that 70 trucks per day would require an overnight stay. Of the 70 trucks, it was assumed that 12 overnight parking locations would provide the capability for trucks to plug into electrical outlets to provide electrical power to supply the truck's electrical requirements. Table 11 summarizes the truck distribution for those trucks that would require a short-term stop for refuel, stop at the restaurant or convenience store and then depart the project. Trucks were assumed to travel while on-site at speeds between 5 miles per hour and 15 miles per hour.

Table 9: Truck Refueling Requirements

Vehicle	Type of Diesel Truck	Number of Daily Diesel Trucks
Number of DSL trucks requiring refueling	Light Heavy Duty 1 Light Heavy Duty 2 Medium Heavy Duty Instate Heavy-Heavy Tractor	28 11 12 183
	Total	**235**
Note: DSL = Diesel Source: see Appendix C.		

Table 10: Number of Long-term Trucks Requiring Overnight Stay

Vehicle	Type of Diesel Truck	Number of Daily Diesel Trucks
Total number of DSL trucks requiring overnight stay without electrical plugin	Light Heavy Duty 1 Light Heavy Duty 2 Medium Heavy Duty Instate Heavy-Heavy Tractor	12 4 3 40
	Total	**58**
Total number of DSL trucks requiring overnight stay with electrical plugin	Light Heavy Duty 1 Light Heavy Duty 2 Medium Heavy Duty Instate Heavy-Heavy Tractor	2 2 1 7
	Total	**12**
Total number of DSL trucks requiring overnight stay	All DSL Trucks	**70**
Note: DSL = Diesel Source: see Appendix C.		

Table 11: Number of Trucks Requiring a Short-term Stop

Vehicle	Type of Diesel Truck	Number of Daily Diesel Trucks
Total number of DSL trucks requiring a short-term stay	Light Heavy Duty 1 Light Heavy Duty 2 Medium Heavy Duty Instate Heavy-Heavy Tractor	39 12 10 135
	Total	**195**
Note: DSL = Diesel Source: see Appendix C.		

Truck Idling Emissions

Heavy duty trucks were assumed to idle at the various locations within the project site in accordance with the assumptions provided in Table 12.

Table 12: Truck Idling Assumptions

Vehicle	Type of Diesel Truck	Number of Daily Diesel Trucks
Truck Idling while refueling	All DSL Trucks	10 minutes/truck/day (5 minutes waiting to refuel and 5 minutes startup)
Truck Idling while parking in lot for restaurant and convenience store	All DSL Trucks	5 minutes/truck/day; vehicle shutdown on arrival at parking lot
Truck Idling while parking overnight	All DSL Trucks	3 hours/truck/day (30 minutes/hour for 6-hour overnight stay)
Note: DSL = Diesel Source: see Appendix C.		

Transportation Refrigeration Units

A transportation refrigeration unit (TRU) system is powered by an integral internal combustion engine, usually a diesel engine, designed to control the environment of temperature-sensitive products that are transported in semi-trailer vans, truck vans, railcars, or shipping containers. Since many products must be protected from freezing as well as warm ambient temperatures, TRUs may be capable of both cooling and heating. In the transportation industry, the term “refrigerated” is often used to refer to heating as well as cooling. Information from similar projects indicates that approximately 25 percent of trucks maybe equipped with a TRU. Calculations of the TRU emission were based on a 36-horsepower TRU, a load factor of 0.38, and an on/off cycle factor of 0.5. Table 13 summarizes the project TRU usage assumptions, while Table 14 provides a summary of the TRU’s operational characteristics.

Table 13: Project Truck TRU Assumptions

Location	Type of Diesel Truck	Number of Daily Diesel Trucks with TRU[(1)]
Total Number TRUs entering and exiting project site	All Diesel Trucks	67
Number of TRUs at refueling area	All Diesel Trucks	59
Number of TRUs in overnight parking area	All Diesel Trucks	18
Number of TRUs in parking lot for restaurant and convenience store	All Diesel Vehicles	49
Note: (1) Assumes 25 percent of the diesel trucks are equipped with a TRU Source: see Appendix C.		

Table 14: TRU Operational Assumptions

Operational Parameter	Value
Engine size: Load Factor: On/Off Cycle Factor: Emission Height:	36 horsepower 0.38 50% 4 meters
TRU Operational Parameters	**Value**
TRU operations during refueling	30 minutes
TRU operations in overnight area	6 hours
TRU operations while in parking lot for restaurant and convenience store	30 minutes
Source: see Appendix C.	

Off-site Vehicle Travel

Off-site vehicle trips consist of project vehicle traffic to/from the project's southeast driveway (Driveway 1) along Taft Highway. The project traffic study estimates that 35 percent of the truck traffic will travel north of the project along State Route 99, 35 percent of the truck traffic will travel to the south of the project along State Route 99, 15 percent of the traffic along Taft Highway will travel to the east of the project, and 15 percent of the traffic along Taft Highway will travel to the west of the project. An off-site vehicle speed was assumed to range from 5 miles per hour to 25 miles per hour.

Mobile Source Emission Factors

The emission factors applied in this assessment were derived from ARB's EMFAC2017 mobile source emission model for Kern County. The factors were selected by calendar year, vehicle class, fuel type, and vehicle speed. Table 15 contains a listing of the DPM travel exhaust and idling emission factors and the TRU operational emission factor used in the HRA. Estimates of DPM emissions were made for the calendar year 2022 corresponding to the opening operational year for the project. To provide a "worst-case" estimate of emissions, it was assumed that the truck emissions would remain constant at their 2022 levels. The operation of the TRUs was assumed to be in compliance with the USEPA Tier IV emission standard of 0.02 grams per horsepower hour for DPM (as PM_{10} exhaust).

Table 15: DPM (as PM_{10} Exhaust) Emission Factors

Vehicle Classification	On-site		Off-site site
	Exhaust Emission Factor[(1)] (g/mile)	Idling Emission Factor[(2)] (g/hour)	Exhaust Emission Factor[(3)] (g/mile)
LHDT1	0.065	0.791	0.053
LHDT2	0.058	0.795	0.047
Medium Heavy Duty Instate	0.074	0.078	0.057

Table 15 (cont.): DPM (as PM_{10} Exhaust) Emission Factors

Vehicle Classification	On-site		Off-site site
	Exhaust Emission Factor[(1)] (g/mile)	Idling Emission Factor[(2)] (g/hour)	Exhaust Emission Factor[(3)] (g/mile)
Heavy-Heavy Duty Tractor	0.050	0.020	0.040
Transportation Refrigeration Units (g/hp-hr)	**0.02**	—	—

Notes:
(1) EMFAC2017 average emission factors for Kern County, 2022 from 5 mph to 15 mph
(2) EMFAC2017 idling emission factor for Kern County 2022
(3) EMFAC2017 average emission factors for Kern County, 2022 from 5 mph to 25 mph
g/hp-hr = grams per horsepower-hour
Source: see Appendix C.

Estimation of Mobile Source DPM Emissions Totals

Table 16 summaries the estimated DPM mobile source emissions for project operations.

Table 16: Summary of Operational DPM Emissions

Source	DPM Emissions (pounds/day)
On-site Truck/TRU Travel Exhaust	0.021
On-site Truck Idling/TRU in fueling area	0.022
On-site Truck Idling/TRU for Overnight Parking	0.117
On-site Truck/TRU Idling for Non-Overnight Parking	0.015
Off-site Truck/TRU Travel Exhaust	0.032
Total	**0.208**
Source: see Appendix C.	

Emissions from Gasoline Service Station Dispensing and Storage

Evaporative ROG from the operation of the proposed gasoline service station were estimated using the guidance contained in the South Coast Air Quality Management District's Risk Management Guidance (SCAQMD 2017). An annual gasoline throughput of 2.5 million gallons was assumed in estimating the emissions from the gasoline service station, based on data provided by the applicant. The gasoline service station ROG emissions were subdivided into various ROG components including benzene, naphthalene, and ethylbenzene emissions in accordance with the SCAQMD risk management guidance.

The SCAQMD Guidance details that TAC emissions from gasoline dispensing facilities should be analyzed from the following activities:

- Loading—Emissions occur when a fuel tanker truck unloads gasoline to the storage tanks. The storage tank vapors, displaced during loading, are emitted through its vent pipe. A pressure/vacuum valve installed on the tank vent pipe significantly reduces these emissions.
- Breathing—Emissions occur through the storage tank vent pipe as a result of temperature and pressure changes in the tank vapor space.
- Refueling—Emissions occur during motor vehicle refueling when gasoline vapors escape through the vehicle/nozzle interface.
- Spillage—Emissions occur from evaporating gasoline that spills during vehicle refueling
- Hose Permeation—Emissions occur when liquid gasoline or gasoline vapors diffuse through the dispensing hose outer surface to the atmosphere.

The SCAQMD guidance also details the air dispersion modeling parameters to be utilized in the air dispersion model for assessing the impacts from the gasoline operational emissions. The various ROG emissions factors from gas station activities are shown in Table 17. Table 18 shows the calculated total ROG and ROG component emissions rates in pounds per day based on a gas station with a throughput of 2.5 million gallons per year and operational 24-hours per day and 365 days a year. The emissions assume application of Phase I and II vapor recovery systems to control gasoline emissions. Phase I vapor recovery refers to the collection of gasoline vapors displaced from storage tanks when cargo tank trucks make gasoline deliveries. Phase II vapor recovery systems control the vapors displaced from the vehicle fuel tanks during refueling. In addition, all gasoline is stored underground with valves installed on the tank vent pipes to further control gasoline emissions. Of the TACs emitted from the gasoline stations, only benzene, ethylbenzene, and naphthalene have cancer toxicity values.

Table 17: Summary of Gas Service Station TAC Emission Factors

Activity	Gasoline Emissions (pounds/1,000 gallons)[1]			
	ROG	Benzene	Ethylbenzene	Naphthalene
Tank Loading	0.150	0.000683	0.000161	0.0000006
Tank Breathing	0.024	0.000109	0.0000283	0.000000096
Refueling	0.329	0.0018	0.000467	0.00000158
Spillage	0.240	0.0017	0.0031	0.000418
Hose Permeation	0.009	0.000041	0.0000106	0.000000036

Note:
[1] SCAQMD 2017
Source: Appendix C.

Table 18: Estimated Gasoline Service Station TAC Emissions

Activity	Gasoline Emissions (pounds/day)[1]			
	ROG	Benzene	Ethylbenzene	Naphthalene
Tank Loading	1.03E+00	4.67E-03	1.10E-03	5.02E-13
Tank Breathing	1.64E-01	7.48E-04	1.76E-04	8.03E-14
Refueling	2.71E+00	1.23E-02	2.90E-03	1.33E-12
Spillage	1.64E+00	1.16E-02	2.12E-02	2.86E-03
Hose Permeation	6.16E-02	2.80E-04	6.60E-05	2.47E-07
Total	**5.61E+00**	**2.97E-02**	**2.54E-02**	**2.6E-03**

Note:
[1] Based on an annual throughput of 2,500,000 gallons per year
Source: Appendix C.

4.5.2 - Atmospheric Dispersion Methodology

Atmospheric dispersion modeling is the mathematical simulation of how air pollutants disperse in the ambient atmosphere. The modeling is performed with computer programs that solve the mathematical equations and algorithms that simulate the air pollutant dispersion. The air dispersion model uses emissions from various emission sources and meteorological data such as wind speed and direction, temperature, and atmospheric mixing rates to estimate the air pollutant impacts at locations where the impacts of the emissions are to be estimated (referred to as receptor locations).

To estimate pollutant impacts during operation at locations surrounding the project, an air dispersion model known as the AERMOD air dispersion model (AERMOD Version 18081)—which is approved by the SJVAPCD for performing health risk assessments—was used in this assessment. The AERMOD model uses the locations and amounts of the project's operational emissions, representative meteorological data, and locations of the surrounding receptors to estimate impacts at the receptors.

Table 19 provides the general assumptions applied in the AERMOD model. Table 20 summarizes the assumptions used to configure the various operational emission sources analyzed in this HRA. Appendix C contains the calculation details. The meteorological data were taken from the SJVAPCD Arvin monitoring station for the time period 2007 to 2011 and is considered representative of the meteorological conditions at the project site.

Table 19: General Modeling Assumptions

Feature	Assumption
Terrain processing	• Complex terrain; elevations were obtained for the project site using the EPA AERMAP terrain data pre-processor
Land Use	• Rural based on land use patterns surrounding the project site

Table 19 (cont.): General Modeling Assumptions

Feature	Assumption
Meteorological Data	• Arvin, CA for the years 2007 to 2011 from the SJVAPCD as representative of meteorological conditions at the project site
Receptor locations and heights	• Closest sensitive receptors placed at existing residences across Taft Highway to the south of the project and residences to the north of the project • Receptors placed at ground-level
Source: see Appendix C.	

Table 20: Summary of Operational Emission Source Configurations

Emission Source Type	Geometric Configuration	Relevant Assumptions
On-site Diesel Truck Traffic	Line Source	• Stack release: height—6 feet; width—12 feet • Heavy-duty trucks access the project from southeast driveway (Driveway 1) along Taft Highway to various on-site locations • Vehicle types: heavy-duty diesel trucks; see Table 1 • Emission factor: ARB EMFAC 2017; combined average DPM (as PM_{10} exhaust) emission factors at 5, 10, and 15 mph for 2022 for Kern County; no credit for future emission factors • Operations: 24/7
On-site Diesel Truck Idling—Fueling Area	Point Source located at center of the , refuel location	• Stack release characteristics - Stack height: 3.7 meters - Stack diameter: 0.1 meter - Stack velocity: 51.7 meters per second - Stack temperature: 366°K • Idle time: depends on vehicle type and idling location (Table 5) • Vehicle type: heavy-duty diesel delivery trucks • Emission factor: ARB EMFAC 2017; idle emission factor for 2022 for Kern County • Operations: 24/7
On-site Diesel Truck Idling –Overnight Area	Point Source located at the center of the overnight area	• Truck requirements: 70 trucks per day of which 12 are assumed to be plug-in trucks • 3 hours/truck/day (30 minutes/hour for 6-hour overnight stay) • Vehicle type: heavy-heavy-duty diesel truck • Emission factors: ARB EMFAC2017 • Operations: 24/7

Table 20 (cont.): Summary of Operational Emission Source Configurations

Emission Source Type	Geometric Configuration	Relevant Assumptions
Transportation Refrigeration Unit	Point Source when stationary; Line Source when traveling	• Assumes that 25% of heavy-heavy-duty trucks will be equipped with a TRU • Horsepower: 36 • Load Factor: 38% • On/Off Cycle Factor: 50% • Stack release height: 3.7 meters • Operations 24/7 • Emission factors assume compliance with Tier IV standards • Operations: dependent on location within the project; see Table 6
On-site Diesel Truck Idling—Short-term parking	Point Source located at the center of the parking area	• Truck usage: see Table 4 • Idle time: 5 minutes per truck • Vehicle type: heavy-heavy-duty diesel truck • Emission factors: ARB EMFAC2017 • Operations: 24/7
Off-site Vehicle Traffic	Line Sources	• Stack release height: 3.7 meters • Emission factor: ARB EMFAC 2017; combined average DPM (as PM_{10} exhaust) emission factors at 5, 10, 15, 20, and 25 mph for 2022 for Kern County; no credit for future emission factors • Vehicle type: heavy-duty trucks • Travel to/from Driveway 1 and Taft Highway and State Route 99 • Operations: 24/7
Gasoline Service Station	Point Sources for loading, breathing loss emissions, Volume sources for fueling, hose permeation, spillage emissions	• 5 meters for loading and breathing loss emissions; surface release for spillage emissions; 1 meter for hose permeation and refueling emissions • Operations 24/7 • Annual throughput: 2.5 million gallons • Emissions estimated from South Coast Air Quality Management District Guidance (SCAQMD 2017)

Note:
mph = miles per hour
Source: see Appendix C.

Figure 8 provides the locations of the emission sources included in this assessment.

4.5.3 - Cancer Risk Estimation Methodology

Cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer as a direct result of exposure to potential carcinogens over a specified exposure duration. The estimated risk is expressed as a probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 20 in a million implies a likelihood that up to twenty people in a population of one million equally exposed people could contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants

over a specified duration of time. This risk is an excess cancer risk that is in addition to any environmental cancer risk borne by a person not exposed to these air toxics. The SJVAPCD has published a detailed methodology for estimating cancer risks (SJVAPCD 2015c) that were used in quantifying the project's cancer risks. The SJVAPCD methodology is based on the recommendations from the California Office of Environmental Health Hazards Assessment (OEHHA 2015).

The cancer risk from TACs is calculated by multiplying the average air concentration of TAC calculated using an air dispersion model at each receptor location and an inhalation exposure factor as expressed in Equation 1 below. The focus for this HRA is on exposures to DPM since DPM accounts for the largest contribution to cancer risk in California.

$$\text{Cancer Risk} = C_{DPM} \times \text{Inhalation Exposure Factor} \qquad \text{(EQ-1)}$$

Where:

Cancer Risk = Total individual excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular source for specified exposure durations; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population; cancer risk is expressed in terms of risk per million exposed individuals.
C_{DPM} = Annual average DPM air concentration calculated from the AERMOD air dispersion model in $\mu g/m^3$

Since inhalation is the most important exposure pathway to impact human health from airborne DPM, the inhalation exposure factor is defined as follows:

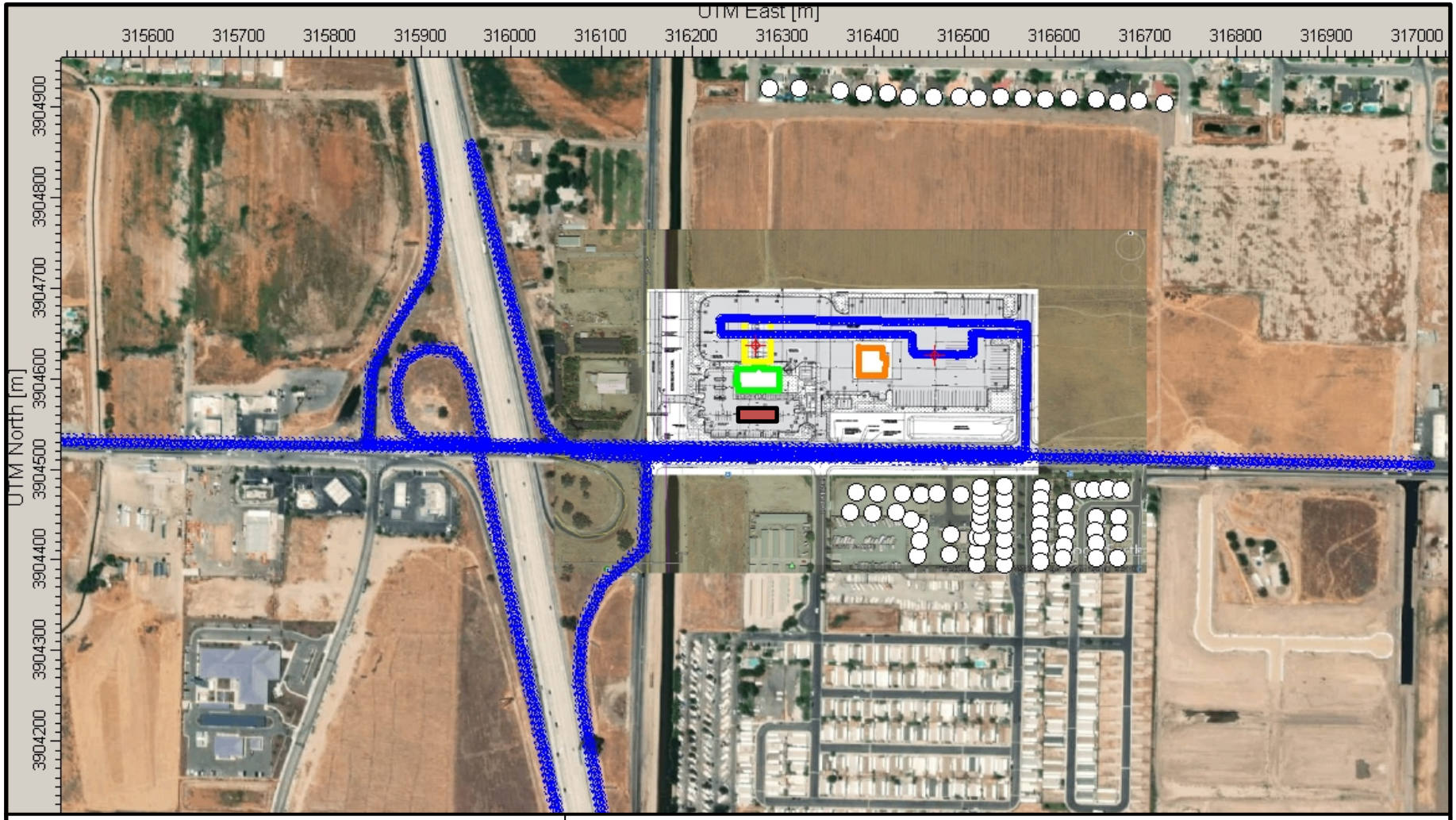
$$\text{Inhalation Exposure Factor} = \text{CPF} \times \text{EF} \times \text{ED AAF/AT} \qquad \text{(EQ-2)}$$

Where:

CPF = Inhalation cancer potency factor for DPM (1.1 mg/kg-day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
AAF = set of age-specific adjustment factors that include age sensitivity factors (ASF), daily breathing rates (DBR), and time at home factors (TAH).
AT = Averaging time period over which exposure is averaged (25,550 days)

Cancer Risk Age-Specific Adjustment Factors (AAF)

The SJVAPCD guidance incorporates early-in-life cancer risk adjustment factors that account for the increased sensitivity and susceptibility of infants and young children to exposures to airborne carcinogens as defined by the California Office of Environmental Health Hazards Assessment (OEHHA 2015). These adjustment factors include age-sensitivity weighting factors, age-specific daily breathing rates, and age-specific time-at-home factors. Table 21 provides the SJVAPCD recommended values for the various cancer risk parameters shown in Equation 2 for sensitive/residential receptors. The exposure assumptions relate to the lifetime exposure commencing from pre-birth to adults and a 70-year lifetime exposure duration for sensitive receptors.



Legend

- Truck/TRU Travel Routes
- Truck/TRU Idling
- Receptor Locations
- Gasoline Service Station

N

0 500

Feet

ELMER F. KARPE, INC.
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT

KARPE DEVELOPMENT

Figure 8. Locations of Emission Sources and Receptors

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The assumptions shown in Table 21 are embedded in the ARB HARP2 health risk model. The ARB HARP2 (Version 19044) health risk model was used to estimate cancer risks from the project operation. The HARP2 model makes use of the DPM concentrations and the ROG-gasoline component concentrations generated by the AERMOD model to calculate risks and hazards at receptor locations. Table 22 summarizes the assumptions used in the HARP2 model for calculating risks and hazards from the project's operational DPM and ROG-component emissions.

With regard to the ROG-component emissions, the cancer potency factors specific to the emissions from the gasoline service station were used in estimating cancer risks.

Chronic Non-Cancer Hazards

Separate from cancer risk impacts, exposures to TACs can also cause chronic or long-term related non-cancer illnesses such as reproductive effects, respiratory effects, eye sensitivity, immune effects, kidney effects, blood effects, central nervous system, birth defects, or other adverse environmental effects. Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of a project's emissions to a concentration considered acceptable to public health professionals, termed the Reference Exposure Level (REL). This is a separate and distinct analysis from the analysis conducted for cancer risk. A significant risk is defined by the SJVAPCD as an HI of 1 or greater.

When evaluating chronic non-cancer effects due to TAC exposures, a hazard quotient (HQ) is established for each individual TAC as follows and for each target organ[1] affected by the individual TAC:

$$HQ_i = C_{air}/REL_i \qquad \text{(EQ-3)}$$

Where:

HQ_i = chronic hazard quotient for each TAC
C_{air} = Annual average concentration of each TAC ($\mu g/m^3$)
REL = Chronic Reference Exposure Level ($\mu g/m^3$)

To evaluate the potential for adverse non-cancer health effects from simultaneous exposure to multiple TACs, the HQs for all TACs that affect the same target organ are summed yielding an HI as follows:

$$HI_{CNCHI} = \Sigma HQ_i \qquad \text{(EQ-4)}$$

Where:

HI_{CHI} = chronic hazard index for all TACs
ΣHQ_i = sum of all chronic hazard quotients for each individual TAC affecting the same target organ

[1] A target organ is a biological organ(s) most adversely affected by exposure to a chemical substance and includes the respiratory system, cardiovascular system, eyes, nervous system, hematological system, immune system, reproductive system, developmental system, skin, and endocrine system.

Calculations of chronic health effects were based on annual average DPM concentrations from motor vehicles and ROG-component concentrations from the operation of the gasoline service station. The REL appropriate to each TAC were obtained from the OEHHA TAC database.

Table 21: Exposure Assumptions for Lifetime Cancer Risks

Age Bins	Exposure Frequency		Exposure Duration (years)	Age Sensitivity Factors (ASF)	Time at Home Factor (TAH)	Daily Breathing Rate[(1)] (DBR) (L/kg-day)
	Hours/day	Days/year				
Sensitive/Residential Receptor—Child to Adult						
3rd Trimester	24	350	0.25	10	1	361
0 to 2 years	24	350	2	10	1	1,090
3 to 16 years	24	350	14	3	1	745
17 to 70 years	24	350	54	1	1	290

Notes:
(1) The daily breathing rates recommended by the SJVAPCD for sensitive/residential receptors assume the 95th percentile breathing rates
(L/kg-day) = liters per kilogram body weight per day
Source: SJVAPCD 2015c; Appendix C.

Table 22: HARP2 Model Assumptions

Feature	Assumption
DPM Concentrations ROG Component Concentrations	• Annual average concentrations from the AERMOD air dispersion model
Individual Cancer Risk Worker Cancer Risk	• 70-year exposure duration; OEHHA Derived Method; fraction of time at home = 1 for all age bins
Chronic Non-Cancer Hazard	• OEHHA Derived Method
Pathways	• Inhalation, soil ingestion, dermal; mother's milk, home-gown produce
Deposition	• 0.02 meter/second
Source: see Appendix C.	

SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

5.1—CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines effective December 28, 2018. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact statement below.

5.2—Impact Analysis

5.2.1 - Consistency with Air Quality Plan

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI indicates that projects that do not exceed SJVAPCD regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable air quality plan (AQP). An additional criterion regarding the project's implementation of control measures was assessed to provide further evidence of the

project's consistency with current AQPs. Therefore, this document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project comply with applicable control measures in the AQPs? The primary control measures applicable to development projects is Regulation VIII—Fugitive PM_{10} Prohibitions and Rule 9510 Indirect Source Review.

Contribution to Air Quality Violations

A measure for determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}—if project-generated emissions of either of the ozone precursor pollutants (ROG and NO_X), PM_{10}, or $PM_{2.5}$ would exceed the District's significance thresholds—then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact AIR-2 below, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with the construction and operation of the project would not exceed the District's significance thresholds. As shown in Impact AIR-2, the project would not result in CO hotspots that would violate CO standards. Therefore, the project would not contribute to air quality violations.

Compliance with Applicable Control Measures

The AQP contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A description of rules and regulations that apply to this project is provided below.

Regulation VIII—Fugitive PM_{10} **Prohibitions** is a control measure that is one main strategies from the 2006 PM_{10} for reducing the PM_{10} emissions that are part of fugitive dust. Projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. The project is required to prepare a DCP to comply with Regulation VIII.

Rule 2201—New and Modified Stationary Source Review Rule. The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards. Permits are required for the project gasoline

storage and fueling operations. The restaurant may require permits depending on the type of grill installed.

Rule 4001—New Source Performance Standards establishes specific standards, criteria, and requirements that new sources of air pollution or modification of existing sources must comply with.

Rule 4002—National Emissions Standards for Hazardous Air Pollutants. The purpose of the rule is to incorporate the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations to protect the health and safety of the public from hazardous air pollutants, such as asbestos.

Rule 4102—Nuisance. The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials. Agricultural activities are exempt from the nuisance rule.

Rule 4621—Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants. The purpose of this rule is to limit VOC emissions from stationary storage containers. The project's fuel storage tanks will comply with this rule.

Rule 4622—Gasoline Transfer into Motor Vehicle Fuel Tanks. The purpose of this rule is to limit emissions of gasoline vapors from the transfer of gasoline into motor vehicle fuel tanks. The fuel pumps will utilize vapor recovery systems that comply with this rule.

Other control measures that apply to the project are Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operation that requires reductions in VOC emissions during paving and Rule 4601—Architectural Coatings that limits the VOC content of all types of paints and coatings sold in the San Joaquin Valley. These measures apply at the point of sale of the asphalt and coatings, so project compliance is ensured.

The project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

The applicable General Plan for the project is the Metropolitan Bakersfield General Plan, which was adopted in 2002 prior to adoption of the SJVAPCD's latest AQPs. The 2016 Plan for the 2008 8-Hour Ozone Standard was adopted in June 2016. The 2015 Plan for the 1997 $PM_{2.5}$ Standard was adopted in April 2015 and the 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted in September 2016. The site requires a GPA to change from the current GC designation to LI. Generally, LI land uses produce fewer vehicle trips than GC land uses, and for this project most passenger car and truck trips are existing trips from vehicles currently traveling on State Route 99 and Taft Highway. The air quality attainment plans are required to use the latest planning assumptions when demonstrating attainment. The planning assumptions are based on land use plans and growth projections for the region. Therefore, since the project trips are likely to be fewer than or equal to those under the current designation, they remain consistent with the planning assumptions used for the attainment plans. The project would not conflict with or obstruct implementation of the applicable air quality plans.

Conclusion

The project's emissions would be less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The project's proposed land use designation (LI) would provide uses and development patterns consistent with the land use policies of the Metropolitan Bakersfield General Plan. The project complies with all applicable control measures from the AQP therefore, the project is consistent with the AQP, and the impact would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.2 - Cumulative Criteria Pollutant Impacts

Impact AIR-2: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.
3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Regional Emissions

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are assessed under Impact AIR-3—Sensitive Receptors using concentration-based thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during project construction and operation are ROG, NO_X, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, NO_X, ROG, SO_X, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and NO_X emissions in the presence of sunlight. Therefore, ROG and NO_X are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year NO_X
- 10 tons per year ROG
- 27 tons per year SO_X
- 15 tons per year PM_{10}
- 15 tons per year $PM_{2.5}$

The project does not contain sources that would produce substantial quantities of SO_2 emissions during construction and operation. Modeling conducted for the project show that SO_2 emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of SO_2 is required.

Construction Emissions

Construction emissions were modeled using the CalEEMod version 2016.3.2. The results of the modeling are presented in Table 23. The emissions that would occur during construction activities were compared with the significance threshold for each pollutant. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table 23, the emissions are below the significance thresholds. Therefore, the emissions would be less than significant on a project basis.

Table 23: Construction Air Pollutant Emissions Summary (Unmitigated)

Year	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction 2021	0.74	4.53	3.84	0.01	0.66
Significance threshold (tons/year)	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Notes:
PM_{10} and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive PM_{10} Prohibitions.
ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Calculations use unrounded numbers.
Source: CalEEMod output (Appendix A).

Operational Emissions

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. First occupancy is expected in January 2022 and was used as the project buildout modeling year. The SJVAPCD considers construction and operational emissions separately when making significance determinations.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions modeling results for project operation are summarized in Table 24.

As shown in Table 24, the emissions are below the SJVAPCD significance thresholds prior to application of mitigation measures or taking credit for project design features that would reduce project emissions and, therefore, would result in a less than significant impact.

Table 24: Operational Air Pollutant Emissions (2022 Unmitigated)

Source	Emissions (tons per year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	0.18	0.00	0.00	0.00	0.00
Energy	0.01	0.05	0.04	0.00	0.00
Mobile Passenger Vehicles	0.80	0.27	3.48	0.26	0.07
Mobile Trucks	0.20	7.74	0.98	0.05	0.02
Total Project Emissions	**1.18**	**8.06**	**4.50**	**0.32**	**14.07**
Significance threshold	10	10	100	15	15
Exceed threshold—significant impact?	No	No	No	No	No

Notes:
ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix A).

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which

includes the amendments approved by the Natural Resources Agency, effective on December 28, 2018. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, PM_{10}, or $PM_{2.5}$ exceed the ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans. See Section 2.3—Existing Air Quality Conditions for additional correlation of the health impacts with the existing pollutant concentrations experienced in the Bakersfield area.

Under the CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin, because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources and the latest planning assumptions for growth.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Section 2.4, Air Quality Plans. The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer NO_X reductions to attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NO_X and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving NO_X and ammonia to form nitrate particles. Reductions in NO_X required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations. This project does not exceed SJVAPCD quantitative thresholds; therefore, the project is considered less than significant for this criterion.

Project Health Impacts

In the 5th District Court of Appeal case *Sierra Club v. County of Fresno (Friant Ranch, L.P.)*, the Court found the project EIR deficient because it did not identify specific health-related effects resulting from the estimated amount of pollutants generated by the project. The ruling stated that the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The standard measure of the severity of impact is the concentration of pollutant in the atmosphere compared to the ambient air quality standard for the pollutant for a specified period of time. The severity of the impact increases with the concentration and the amount of time that people are exposed to the pollutant. The change in health impacts with concentration is described in Table 3 and Table 4 using the EPA's Air Quality Index. The pollutants of concern in the Friant Ranch ruling were regional criteria pollutants ozone, and PM_{10}. It is important to note that the potential for localized impacts can be addressed through dispersion modeling. The SJVAPCD includes screening criteria that if exceeded would require dispersion modeling to determine if project emissions would result in a significant health impact. For this project, no significant localized health impacts would occur. Regional pollutants require more complex modeling as described below.

Ozone concentrations are estimated using regional photochemical models because ozone formation is subject to temperature, inversion strength, sunlight, emissions transport over long distances, dispersion, and the regional nature of the precursor emissions. The emissions from individual projects are too small to produce a measurable change in ozone concentrations—it is the cumulative contribution of emissions from existing and new development that is accounted for in the photochemical model. Ozone concentrations vary widely throughout the day and year even with the same amount of daily emissions. The SJVAPCD indicated in an Amicus Brief on Friant Ranch that running the photochemical model with just Friant Ranch emissions (109.5 tons/year NO_X) is not likely to yield valid information given the relative scale involved. A copy of the SJVAPCD brief is included in Appendix B. The NO_X inventory for the San Joaquin Valley is 224 tons per day in 2019 or 81,760 tons per year. Friant Ranch would result in 0.13 percent increase in NO_X emissions. A project emitting at the SJVAPCD CEQA threshold of 10 tons per year would result in a 0.01 percent increase in NO_X emissions. Most project emissions are generated by motor vehicle travel distributed on regional roadways miles from the project site, and these emissions are not conducive to project-level modeling.

Emissions throughout the San Joaquin Valley are projected to markedly decline in the coming decade. The SJVAPCD 2016 Ozone Plan predicts NO_X emissions will decline to 103 tons per day by 2029 or 54 percent from 2019 levels through implementation of control measures included in the plan. This means that ozone health impacts to residents of the San Joaquin Valley will be lower than currently experienced and most areas of the San Joaquin Valley will have attained ozone air quality standards. The plan accounts for growth in population at rates projected by the State of California for the San Joaquin Valley, so only cumulative projects that would exceed regional growth projections would potentially delay attainment and prolong the time and the number of people would experience health impacts. It is unlikely that anyone would experience greater impacts from

regional emissions than currently occur. The federal transportation conformity regulation provides a means of ensuring growth in emissions does not exceed emission budgets for each County. Regional Transportation Plans and Regional Transportation Improvement Plans must provide a conformity analysis based on the latest planning assumptions that demonstrates that budgets will be not be exceeded. If budgets are exceeded, the San Joaquin Valley may be subject to Clean Air Act sanctions until the deficiency is addressed.

Particulate emission impacts can be localized and regional. Particulates can be directly emitted and can be formed in the atmosphere with chemical reactions. Small directly emitted particles such as diesel emissions and other combustion emissions can remain in the atmosphere for a long time and can be transported over long distances. Large particles such as fugitive dust tend to be deposited a short distance from where emitted but can also travel long distances during periods of high winds. Particulates can be washed out of the atmosphere by rain and deposited on surfaces. Secondary particulates formed in the atmosphere such as ammonium nitrate require NO_X and ammonia, and they require low inversion levels and certain ranges of temperature and humidity to result in substantial concentrations. These complications make modeling project particulate emissions to determine concentration feasible only for directly emitted particles at receptor locations close to the project site. Regional particulate concentrations are modeled using a gridded inventory (emissions in tons/day are placed a 4-kilometer, three-dimensional grid to spatially allocate the emissions geographically and vertically in the atmosphere) and an atmospheric chemistry component to simulate the chemical reactions. The model used in the San Joaquin Valley uses relative reduction factors to determine the amount of reductions of each PM component will be needed to attain the air quality standards on the days with the conditions most favorable to high particulate concentrations. A small project would not produce sufficient emissions to determine a project's individual contribution to the particulate concentration or its health impacts.

Step 3: Cumulative Health Impacts

The Air Basin is in nonattainment for ozone, PM_{10} (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects. Table 2, Table 3, and Table 4 relate the pollutant concentration experienced by residents using air quality data for the nearest air monitoring station to the health impacts ascribed to those concentrations by the EPA Air Quality Index. This provides a more detailed look at the actual impacts currently experienced by area residents.

Since the Basin is nonattainment for ozone, PM_{10}, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the project. When this occurs, the analysis considers whether the project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NO_X, VOC, PM_{10}, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a

cumulatively considerable health impact. As shown in Table 23 and Table 24, the regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the project's emission contribution.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.2.3 - Sensitive Receptors

Impact AIR-3: The project would not expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The District considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest off-site sensitive receptors are existing residences in a mobile home park located south of the project across Taft Highway. Additional more distant sensitive receptors are located in residential subdivisions north of the project site.

Sensitive Receptors

Impacts to receptors located outside the project boundaries would occur primarily during project operations. Project construction emissions are short term and involve relatively small amounts of construction activity. The project includes the construction of only 25,643 square feet of structures. The primary impact to sensitive receptors will be from diesel particulate matter emitted by the diesel trucks accessing the site. A health risk assessment (HRA) was prepared to determine the increase in cancer risk from the project. For criteria pollutants, impacts to receptors are based on emissions during the highest daily emissions during construction and operations. As shown in Table 25 and Table 26, emissions generated from construction and operation of the project are less than SJVAPCD screening criteria. Therefore, this impact would be less than significant.

Construction: ROG

ROG is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings is a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction would be less than significant.

Localized Pollutant Screening Analysis

Emissions occurring at or near the project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if, when combined with background emissions, they would result in exceedance of any health-based air quality standard. The impact from localized pollutants is based on the impact to the nearest sensitive receptor.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with applicable rules and regulations and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the SJVAB are PM_{10}, $PM_{2.5}$, NO_X, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

The highest daily emissions occur during project grading activities except for ROG emissions, which are highest during application of architectural coatings. The results of the construction screening analysis are presented in Table 25.

Table 25: Maximum Daily Air Pollutant Emissions during Construction

Maximum Daily Emissions by Year	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction 2020	49.55	53.36	48.46	10.32	6.39
Screening Thresholds	100	100	100	100	100
Exceeds Threshold (Yes or No)	No	No	No	No	No

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions were highest in the summer run for ROG and CO, while emissions for NO_X were higher in the winter run. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

Maximum Daily Operational Emissions

An analysis of maximum daily emissions during operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily operational emissions would occur at project buildout. The built-out project was modeled for 2022, which is the estimated year of first occupancy. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape maintenance, and off-site by motor vehicles accessing the project. Most motor vehicle emissions would occur distant from the site and would not contribute to a violation of ambient air quality standards; therefore, operational emissions reflect a conservative assumption. The results of the screening analysis are presented in Table 26.

Table 26: Maximum Daily Air Pollutant Emissions during Operations

Maximum Daily Emissions per Source Category and Phase	Emissions (pounds per day)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	0.97	0.00	0.01	0.00	0.00
Energy	0.03	0.29	0.24	0.02	0.02
Mobile Passenger Vehicles	6.16	1.38	21.80	1.45	0.41
Mobile Trucks	2.13	43.14	6.58	0.32	0.12
Total	**9.29**	**44.81**	**28.63**	**1.79**	**0.55**
Screening threshold	100	100	100	100	100
Exceed screening threshold?	No	No	No	No	No

Notes:
NO_X = nitrogen oxides CO = carbon monoxide PM_{10} and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions were highest in the summer run except for CO, which were higher in the winter run. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

The project would not exceed SJVAPCD screening thresholds for localized operational criteria pollutant impacts; therefore, the project's localized criteria pollutant impacts would be less than significant.

Operation: ROG

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects. ROG from vehicle fueling was assessed in the project HRA.

Operation: PM_{10}, $PM_{2.5}$, CO, NO_2

As shown in Table 26, localized emissions of PM_{10}, $PM_{2.5}$, CO, and NO_2 would not exceed the SJVAPCD screening thresholds at full project build-out. Therefore, the project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

Carbon Monoxide Hot Spot Analysis

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the project vicinity. Advances in emission controls have resulted in attainment of the CO standard throughout California. Recent CO hotspot modeling found that only extremely high traffic volumes could result in a CO hotspot. Traffic volumes at intersections exceeding 44,000 vehicles per hour have been used as a screening criterion to determine if additional modeling should be conducted. Based on Kern COG 2018 data, the intersection of Taft Highway and South H Street experienced daily trip volumes of 13,950, which produces an hourly volume that is a fraction of the 44,000 vehicle per hour screening threshold (Kern COG 2018b). In addition, the project traffic impact study indicates that no intersections would exceed LOS C under cumulative plus project conditions with mitigation.

The construction of the project would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in an increase of in approximately 4,512 new daily trips. This increase would result in hourly trip rates on impacted intersections that are well below the screening criteria. In addition, the highest background 8-hour average CO concentration during the latest year it was monitored is 2.06 ppm, which is 78 percent lower than the CAAQS of 9.0 ppm or the NAAQS of 9 ppm. Therefore, the project would not significantly contribute to an exceedance of state or federal CO standards.

Construction: Toxic Air Contaminants

The project includes the construction of structures totaling a relatively small 25,643 square feet on 19 acres. Most project construction emissions would occur during the 40-day site preparation and grading phases. Ground up building construction activities are not expected to utilize large amounts of construction equipment and the emissions for all construction activities are temporary. Therefore, a construction health risk assessment was not prepared.

Operation: Toxic Air Contaminants

The project will emit toxic air contaminants from the operation of diesel trucks at the site. The facility is used for overnight parking, maintenance, and refueling of diesel trucks. Emissions will occur as trucks travel across the site, while idling, and when entering and exiting the site on roads serving the project. An HRA was prepared to determine if the TAC emissions would result in impacts that exceed the SJVAPCD thresholds of significance. The modeling assumptions used to assess TAC impacts is provided in Section 4.5.

Significance Thresholds

The SJVAPCD has adopted the following significance thresholds shown in Table 27 that apply to this project.

Table 27: SJVAPCD Health Risk and Hazard Significance Thresholds

Metric	Significance Threshold
Cancer Risk	20 in one million
Non-Cancer Hazard Index	1.0

Results of the Health Risk Assessment

The analysis identified emission sources for truck on-site travel and idling at the fueling facility and parking area. An additional analysis of gasoline fueling emissions was also prepared for the project. The largest source of on-site TAC emissions is from truck idling and TRU operation while the trucks are on-site. In order to ensure that truck idling would not exceed these amounts, a mitigation measure was included to ensure drivers are aware that the maximum idling time to 5 minutes as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]. The project is also expected to provide 12 parking spaces equipped for electrical plug in capability to power trucks during overnight parking and reduce engine idling.

The SJVAPCD guidance incorporates early-in-life cancer risk adjustment factors that account for the increased sensitivity and susceptibility of infants and young children to exposures to airborne carcinogens as defined by the California Office of Environmental Health Hazards Assessment (OEHHA 2015). These adjustment factors include age-sensitivity weighting factors, age-specific daily breathing rates, and age-specific time-at-home factors. The analysis incorporates the SJVAPCD recommended values for the various cancer risk parameters shown in Equation 2 for sensitive/residential receptors and worker receptors. The exposure assumptions relate to the lifetime exposure commencing from pre-birth to adults and a 70-year lifetime exposure duration for sensitive receptors and a 40-year exposure duration for worker receptors.

Table 28 summarizes the results of this HRA for project operations. As noted from Table 28, the maximum cancer risks and hazards at the nearest sensitive receptor and worker receptors are less than the applicable significance thresholds.

Table 28: Summary of Proposed Project Health Risk Analysis

Location[(1)]	Cancer Risk (per million)		Exceeds Significance Threshold?
	Maximum Lifetime Proposed Project Risk	Significance Threshold	
Maximum Impacted Sensitive Receptor	15.0	20	No
Location[(1)]	**Chronic Non-Cancer Hazard Index**		**Exceeds Significance Threshold?**
	Estimated Hazard Index	**Significance Threshold**	
Maximum Impacted Sensitive Receptor	0.003	1.0	No

Note:
(1) The maximum impacted sensitive receptor is located at existing residences south of the project across Taft Highway.
Source: Appendix C.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). California experienced a record number of Valley Fever cases in 2017 with 7,466 new cases. The San Joaquin Valley is considered an endemic area for Valley fever. Within the region, Kern County reported 37 percent of all new incidences of Valley Fever or approximately 2,762 cases. (CDPH 2018).

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits
3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)
6) Packrat middens
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields
2) Heavily vegetated areas (e.g. grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g. ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete) or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The project site is situated in a city growth area. The project includes urbanization of a site that was formerly used for agricultural purposes. Therefore, implementation of the project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil. However, exposure to blowing dust should be minimized.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores, would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Naturally Occurring Asbestos

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

In summary, the project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The project would generate potentially significant quantities of TAC emissions from diesel trucks and gasoline refueling emissions. A mitigation measure to ensure that trucks comply with the State idling limit regulation has been included to reduce this impact to less than significant levels. The project is not in an area with suitable habitat for Valley fever spores and is not in area known to have naturally occurring asbestos. Therefore, the project would not result in significant impacts to sensitive receptors.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM-AIR-1 Prior to commencing operations, the project operator shall install signage near the fueling area and in truck parking areas that are clearly visible to drivers indicating the following:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).

Level of Significance After Mitigation

Less than significant impact.

5.2.4 - Objectionable Odors

Impact AIR-4: The project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

Thresholds of Significance

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. According to the *CBIA v. BAAQMD* ruling, impacts of existing sources of odors on the project are not subject to CEQA review. The project has a potential to generate odors from the operation of diesel equipment and from restaurant cooking emissions; therefore, the analysis focuses on whether the project would expose substantial numbers of sensitive receptors to objectionable odors. The District has determined the common land use types that are known to produce odors in the Air Basin. These types are shown in Table 29.

Table 29: Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile

Table 29 (cont.): Screening Levels for Potential Odor Sources

Odor Generator	Screening Distance
Painting/Coating Operations (e.g., auto body shop)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile
Source: SJVAPCD 2015a.	

According to the SJVAPCD GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

Project Analysis

Project as a Generator

Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The project would not engage in any of these activities. However, operation of diesel vehicles and equipment could generate odors that some may find objectionable.

During construction and operations, the various diesel-powered vehicles and equipment in use on-site would create localized odors. Emissions from diesel vehicles have been reduced substantially in recent years through the use of cleaner fuels, tailpipe emission control devices, and through restrictions on the amount of engine idling allowed in California to no more than 5 minutes. The State's Diesel Risk Reduction Plan is expected to reduce diesel particulate emissions by 85 percent by 2020. Therefore, the potential for diesel odor impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

6.1—CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97 and amended on December 28, 2018. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

6.2—Impact Analysis

6.2.1 - Greenhouse Gas Inventory

Impact GHG-1: The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.

Impact Analysis

Threshold of Significance

Section 15064.4(b) of the CEQA Guidelines' 2018 amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- **Consideration #1**: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2**: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3**: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term

climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

The City of Bakersfield has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used as a basis for determining project significance. The City assesses GHG emissions using a threshold approach adopted by the SJVAPCD, which requires projects to meet a 29 percent reduction from BAU in accordance with SJVAPCD methodologies. The SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020 (SJVAPCD 2009b). The GHG reduction level for the State to reach 1990 emission levels by 2020 was reduced to 21.7 percent from BAU in 2020 in the 2014 First Update to the Scoping Plan to account for slower than projected growth after the 2008 recession (ARB 2014). In addition, the State has reported that the 2016 greenhouse gas inventory was below the 2020 target for the first time and was even lower in 2017 (ARB 2018b). Furthermore, the 2017 Scoping Plan states that California is on track to achieve the 2020 target (ARB 2017c). This means that the State's strategy has successfully reduced GHG emissions while accommodating the growth in population and vehicle miles traveled that occurred in the State since 2005.

The project is expected to commence operations in 2022. This date is beyond the AB 32 2020 milestone year and the SJVAPCD and other agencies have not developed a new threshold based on SB 32 2030 targets. Therefore, this analysis uses a significance approach based on continued progress toward later goals. The analysis of the project's reduction from BAU based on emissions in 2030 compared with the 21.7 percent reduction is used as one measure of significance. This approach provides estimates of project emissions in the new milestone year compared with the existing threshold to address Considerations 1 and 2 above.

Newhall Ranch

On November 30, 2015, the California Supreme Court issued its decision in *Newhall Ranch,* invalidating the GHG analysis for a large master planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses. In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion (pp. 15–19), (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project (pp. 18–19), and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions (pp. 15–19). The Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU]." The Court indicated that a lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25). A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities."

The substantial evidence needed to support a project BAU threshold can be derived from data used to develop the Scoping Plan inventory and control strategy, and from analysis conducted by the ARB to track progress in achieving the AB 32 2020 target. The critical factor in determining the appropriate project threshold is whether the State requires additional reductions beyond those achieved by existing regulations in order to achieve its target. If no additional reductions are required from individual projects, no nexus exists to require a project to mitigate its emissions. In that case, the percentage reductions achieved by projects through compliance with regulations is the amount needed to reach the AB 32 target.

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted by the responsible agencies and the effectiveness of those regulations have been estimated by the agencies during the adoption process and then are tracked to verify their effectiveness after implementation. The combined effect of this successful effort is that the State now projects that it will meet the 2020 target and achieve continued progress toward meeting post-2020 targets. Governor Brown, in the introduction to Executive Order B-30-15, states "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)."

The Supreme Court was concerned that new development may need to do more than existing development to reduce GHGs to demonstrate that it is doing its fair share of reductions. As will be shown below, new development does do more than existing development and, because of the nature of the sources of GHG emissions related to development, existing development is equally responsible for reducing emissions from the most important sources of emissions. It is important to note that most of the State's regulatory program applies to both new and existing development.

The Scoping Plan reduction from BAU accounts for growth projected in the State and assumes that existing development would continue to emit GHGs at the same rate that occurred in the base year (2002-2004 average). The California Department of Finance (DOF) Report E-5 predicts that population growth in California from 2005 to 2020 will be 13.2 percent. This means that development that existed in 2005 will produce nearly 87 percent of the State's emissions in 2020. Conversely, new development is only responsible for about 13 percent of the emissions generated during this timeframe. If measures to reduce emissions from existing development were not available, new development could not provide sufficient reductions to reach the 2020 target even if their emissions were reduced to net zero. This continues to apply to the 2030 target. The DOF forecasts California's population will grow by 8.1 percent between 2020 and 2030, so existing development will be responsible for 92 percent of the emissions that occur in 2030.

The State's regulatory program is able to target both new and existing development because the two most important strategies—motor vehicle fuel efficiency and emissions from electricity generation—obtain reductions equally from existing and new sources. This is because all vehicle operators use cleaner low carbon fuels and buy vehicles subject to the fuel efficiency regulations, and all building owners or operators purchase cleaner energy from the grid that is produced by increasing percentages of renewable fuels. This includes regulations on mobile sources such as: The Pavley standards that apply to all vehicles purchased in California, the Low Carbon Fuel Standard (LCFS) that applies to all fuel used in California, and the Renewable Portfolio Standard and Renewable Energy Standard that apply to utilities providing electricity to all California homes and businesses. The

reduction strategy where new development is required to do more than existing development is building energy efficiency and energy use related to water conservation regulations. For example, new projects are subject to Title 24 Energy Efficiency standards and CALGreen Code and Model Water Efficient Landscape Ordinance (MWELO) water conservation requirements. Residential buildings constructed to the 2013 Title 24 standards use 25 percent less energy than buildings complying with the 2008 standards. The version of Title 24 effective January 1, 2017 improves energy efficiency in residential buildings by 28 percent compared to the 2013 Title 24 standards and 46 percent compared with 2008 Title 24 standards. New buildings and landscapes are much more energy efficient and water efficient than the development that has been built over the past decades and will require much less energy. The 2019 Title 24 standards which become effective in January 2020 makes progress toward achieving net zero energy use through requirements for on-site renewable generation for most projects. The project buildings would be constructed after 2020 and would be required to comply with 2019 Title 24 standards.

As described above, the State requires an average reduction from all sources of the emission inventory of 21.7 percent to achieve the 2020 target. The Scoping Plan strategy will achieve greater than average reductions from energy and mobile source sectors that are the primary sources related to development projects, and lower than average reductions from other sources such as agriculture. The amount of reduction estimated by the ARB for each sector was based on technical feasibility and cost effectiveness. Review of the 2008 Scoping Plan inventory and strategy shows that the reduction from all development related sources is approximately 29 percent from BAU in order to make up for the below average sectors and achieve the required 21.7 percent average reduction. Achieving the SB 32 2030 target will require an approximate 40 percent reduction from 2020 levels assuming the State achieves the AB 32 target. The 2017 Scoping Plan Update identifies a range of reduction amounts expected from each emission sector, but an amount needed for development's fair share of reductions have not been determined.

As suggested by the Court, a project BAU analysis was prepared for this project that assesses "consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities." The analysis shows the extent to which the project complies with adopted regulations and the additional amount that will be achieved through project design features. At this point in time, no additional reductions are required from new development beyond regulations for the State to achieve its 2020 target. The recently adopted 2030 target will require a reduction from 431 $MTCO_2e$ to 260 $MTCO_2e$ or 40 percent from 1990 levels. After accounting for projected growth of approximately 0.8 percent per year an average decrease of 5.2 percent per year from the State GHG inventory will be required to achieve the target. The 2017 Scoping Plan Update includes a strategy for achieving the needed reductions, but does not identify an amount required specifically from new development. However, all GHG emission sources within development projects are subject to GHG regulations.

Therefore, this analysis demonstrates consistency with the existing 2020 target and shows progress toward achieving the 2030 target. The quantitative analysis prepared for the project provides the reduction from BAU in the 2030 target year to show the progress anticipated prior to applying reductions from new strategies contained in the 2017 Scoping Plan Update. The new reduction strategies from the plan are designed to close the gap between existing commitments and those needed to achieve the 2030 target, but many of the strategies must go through a regulatory process

to be implemented. Therefore, the amount of reductions needed from new development beyond regulations, if any, is uncertain.

The analysis prepared for the project also includes qualitative assessments of compliance with 2008 Scoping Plan, and the 2017 Scoping Plan Update to support GHG significance findings under Impact GHG-2.

To determine significance, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail below.

Impact Analysis

Construction

Total GHG emissions generated during all phases of construction were combined and are presented in Table 30. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortization of the total emissions generated during construction were based on the life of the development (non-residential—30 years) and added to the operational emissions.

Table 30: Construction Greenhouse Gas Emissions

Year	$MTCO_2e$ per year
2021	857.73
Amortized over 30 years	***28.59***

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix A).

Operation

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential wood burning.

Business As Usual Operational Emissions

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2. Modeling assumptions for the year 2005 were used to represent 2030 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted—to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the numbers of passenger vehicles and trucks that are expected to access the site. Full assumptions and CalEEMod model outputs are provided in Appendix A.

2030 Operational Emissions

Operational emissions were modeled for the years 2030 using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2017). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

Emissions Accounting for Applicable Regulations

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I and Pavley II (LEV III) motor vehicle emission standards
- ARB Medium and Heavy-Duty Vehicle Regulation
- 2005, 2008, 2013, and 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Renewable Portfolio Standards (RPS)
- Low Carbon Fuel Standard (LCFS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)

Pavley II/LEV III standards have been incorporated in the latest version of CalEEMod. ARB estimates a 3 percent reduction in 2020 and a 19 percent reduction from the vehicle categories subject to the regulation by 2030 (ARB 2010b and ARB 2013d).

The ARB GHG Regulation for Medium and Heavy-Duty Engines and Vehicles applies to trucks that will be accessing the project site. The benefits of the regulation were incorporated into CalEEMod 2016.3.2. The ARB estimates that this regulation will reduce GHG emissions from the affected vehicles by 7.2 percent (ARB 2013f).

The Low Carbon Fuel Standard (LCFS) is estimated to achieve a 10 percent reduction in emissions by 2020 and an 18 percent reduction by 2030 (ARB 2010). CalEEMod does not include credit for the LCFS.

Title 24 reductions for 2013 and 2016 updates were added to CalEEMod 2016.3.2. The California Energy Commission (CEC) estimates that 2013 Title 24 standards would result in an increase in energy efficiency of 25 percent in residential buildings compared to 2008 Title 24 (CEC 2014a). An additional 28 percent reduction from the 2008 standards have been claimed for compliance with 2016 Title 24. This results in a combined reduction of 46 percent (CEC 2015). Compliance with 2019 Title 24 is expected to reduce energy use beyond 2016 Title 24, but a percentage reduction for non-residential project was not identified (CEC 2018).

RPS is not accounted for in CalEEMod 2016.3.2. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility RPS rate forecast for 2020 (CPUC 2016). PG&E provides emission factors for the electricity it provides to customers and projections for its energy portfolio for 2020 that is used to estimate project emissions. No data to

reflect compliance in 2030 was included in the PG&E projections. The utilities will be required by SB 350 to increase the use of renewable energy sources to 50 percent, but details on individual utility compliance have not been determined.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations (CDWR 2013). Benefits of the water conservation regulations are applied in the CalEEMod mitigation component.

Reductions in emissions from solid waste are based on the City achieving the CalRecycle 75 Percent Initiative by 2020 compared with a 50 percent baseline for 2005. Reductions are taken using the CalEEMod mitigation component.

Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 31. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley LEV Standards apply only to light duty cars and trucks.

Table 31: Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020 and 2030
Pavley Low Emission Vehicle Standards	Light-duty cars and trucks accessing the site are subject to the regulation.	CalEEMod defaults (Pavley I)	25.1[1]
		Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod.	3% 2020 19.5% 2030[2]
Truck and Bus Regulation	Heavy-duty trucks accessing the site for deliveries and services are subject to the regulation.	Adjusted GHG emission factors for the regulation in CalEEMod	7.2%[3]
Low Carbon Fuel Standard (LCFS)	Vehicles accessing the site will use fuel subject to the LCFS	CalEEMod defaults	10% 2020 18% 2030[1]
Title 24 Energy Efficiency Standards	Project buildings will be constructed to meet the latest version of Title 24 (currently 2016). Reduction applies only to energy consumption subject to the regulation.	CalEEMod defaults	35%[4,5]
Green Building Code Standards	The project will include water conservation features required by the standard	CalEEMod mitigation component	20%[6]
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation	CalEEMod mitigation component	20%[7]

Table 31 (cont.): Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction in 2020 and 2030
Renewable Portfolio Standard (RPS)	Electricity purchased for use at the project site is subject to the 33 percent RPS mandate	CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate.	54.5%[8]
Solid waste	The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate.	CalEEMod mitigation component	25%[9]

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:
[1] Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010b)
[2] ARB Staff Report for LEV III Amendments (ARB 2013e)
[3] ARB Staff Report for GHG Regulations for Medium and Heavy-Duty Engines and Vehicles (ARB 2013f)
[4] California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions (CEC 2014b)
[5] California Energy Commission Adoption Hearing Presentation: 2016 Buildings Energy Efficiency Standards (CEC 2015)
[6] 2013 California Green Building Standards Code Section 5.303.2
[7] California Water Plan Update 2013 (CDWR 2013)
[8] Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
[9] CalRecycle 75 Percent Initiative: Defining the Future (2016b)

The project is intended to serve people traveling in motor vehicles; therefore, no additional reductions for design features and benefits from its location and infrastructure were taken. Full assumptions and model outputs are provided in Appendix A and results of this analysis for 2030 are presented in Table 32.

Table 32: Project Operational Greenhouse Gases 2030

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2030 (with Regulation and Design Features)	Percent Reduction
Area	0.00	0.00	4.4%
Energy	211.89	127.87	39.7%
Mobile—Passenger Vehicles	440.63	210.43	52.2%
Mobile—Truck	1,113.71	813.60	26.9%
Waste	41.27	30.95	25.0%
Water	7.76	4.21	45.8%
Amortized Construction Emissions	28.59	28.59	0.0%

Table 32 (cont.): Project Operational Greenhouse Gases 2030

Source	Emissions ($MTCO_2e$ per year)		
	Business as Usual	2030 (with Regulation and Design Features)	Percent Reduction
Total	1,843.85	1,215.65	34.1%
	Reduction from BAU	**628.2**	—
	Percent Reduction	**34.1%**	—
	Significance Threshold	**21.7%**	—
	Are emissions significant?	**No**	

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets. No new target has been set for 2030.
Source: CalEEMod output (Appendix A).

As shown in Table 32, the project would exceed the 21.7 percent reduction required by the State to achieve the 2020 target by 12.4 percent and the SJVAPCD 29.0 percent target by 5.1 percent. No new threshold has been adopted by the SJVAPCD or the City of Bakersfield for the 2030 target, so in the interim the project must make continued progress toward the 2030 goal.

The analysis presented above does not include new strategies proposed in the 2017 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy buildings in future updates to Title 24. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030.

The 2030 emission limit is 260 $MMTCO_2e$. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 $MMTCO_2e$—a reduction of 132 $MMCO_2e$, including existing policies and programs but not including known commitments that are already underway. The 2017 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 33. The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap-and-Trade would provide between 10 and 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

Table 33: 2017 Scoping Plan Update Estimated Change in GHG Emissions by Sector

Scoping Plan Sector	Emissions ($MMTCO_2e$ per year)		
	1990	2030 Proposed Plan Ranges	Percent Change form 1990
Agriculture	26	24–25	-4 to -8
Residential and Commercial	44	38–40	-9 to -14
Electric Power	108	42–62	-43 to -61
High GWP	3	8–11	167 to 267
Industrial	98	77–87	-11 to -21
Recycling and Waste	7	8–9	14 to 29
Transportation (including TCU)	152	103–111	-27 to -32
Net Sink	-7	TBD	TBD
Subtotal	**431**	**300–345**	**-20 to -30**
Cap-and-Trade Program	N/A	40–85	N/A
Total	**431**	**260**	**-40**
Source: ARB 2017 Scoping Plan Update (ARB 2017c).			

Although 2017 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared to what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2017 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations. When requiring mitigation of a project's fair share of a cumulative impact, the Lead Agency must show the nexus between the project contribution and its fair share of mitigation to reduce the impact to less than cumulatively considerable. A threshold based on local support and collaboration with State actions as described in the 2017 Scoping Plan Update does not lend itself to a quantitative determination of fair share. Requiring developers and future residents of the development to fully mitigate emissions without accounting for compliance with regulations would result in double mitigation, first by the developer and then by the residents purchasing electricity, fuel, and vehicles compliant with regulations in effect at the time of purchase and beyond that would violate constitutional nexus requirements.

In conclusion, the project would achieve reductions 12.4 percent beyond the ARB 2020 21.7 percent target and 10.4 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features. No new threshold has been adopted by the City for the SB 32 2030 target. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to

achieving the 2030 target. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 33, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity and products produced by regulated industries which include future residents of development projects and other purchasers of products and services. Therefore, the impact in terms of Considerations #1 and #2 would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

6.2.2 - Greenhouse Gas Reduction Plans

Impact GHG-2: The project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.

Impact Analysis

The following analysis assesses the project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. The City of Bakersfield has not adopted a GHG reduction plan. In addition, the City has not completed the GHG inventory, benchmarking, or goal-setting process required to identify a reduction target and take advantage of the streamlining provisions contained in the CEQA Guidelines amendments adopted for SB 97 and clarifications provided in the CEQA Guidelines amendments adopted on December 28, 2018. The SJVAPCD has adopted a Climate Action Plan, but it does not contain measures that are applicable to development projects. Therefore, the SJVAPCD Climate Action Plan cannot be applied to the project. Since no other local or regional Climate Action Plan is in place, the project is assessed for its consistency with ARB's adopted Scoping Plans. This would be achieved with an assessment of the project's compliance with Scoping Plan measures contained in the 2008 Scoping Plan and the 2017 Scoping Plan Update.

AB 32 Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that

goal. The Scoping Plan calls for an “ambitious but achievable” reduction in California’s GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB has updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets.

The Scoping Plan contains a variety of strategies to reduce the State’s emissions. As shown in Table 34, the project is consistent with most of the strategies, while others are not applicable to the project. As discussed earlier, the 2017 Scoping Plan Update strategies primarily rely on increasing the stringency of existing regulations with which the project would continue to comply, support through the project’s design, and implementation of the General Plan goals and policies.

Table 34: Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles 2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards.
	Low Carbon Fuel Standard.	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure.

Table 34 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The project will provide commercial development in the region that is consistent with the land uses assessed in the 2018 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
	Goods Movement	Goods Movement Action Plan January 2007.	**Not applicable**. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicles	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	**Consistent**. This measure applies to medium- and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or lead agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owner of the project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving exceeding the renewable mandate.
		SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	

Table 34 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	Million Solar Roofs Program	Tax incentive program	**Consistent.** This measure is intended to increase solar throughout California by means of a variety of electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction. The project design does not preclude the future installation of solar panels.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The project will also comply with the MWELO as required by the City's development code and water ordinance.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The State will increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy.
Industry	Industrial Emissions	2010 ARB Mandatory Reporting Regulation	**Not applicable.** The project is not an industrial land use.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Bakersfield recycling services.
		AB 341 Statewide 75 Percent Diversion Goal	

Table 34 (cont.): Project Consistency with AB 32 Scoping Plan

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Forests	Sustainable Forests	Cap-and-Trade Offset Projects	**Not applicable.** The project site is in an area designated for urban uses. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	ARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The project is not expected to use large systems subject to the refrigerant management regulations adopted by ARB.
Agriculture	Agriculture	Cap-and-Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The project site is proposed for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project.
Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008.			

Consistency with California's Post-2020 Targets

The State's executive branch adopted several Executive Orders related to GHG emissions. Executive Orders S-3-05 and B-30-15 are two examples. Executive Order S-3-05 sets goals to reduce emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The goal of Executive Order S-3-05 to reduce GHG emissions to 1990 levels by 2020 was codified by AB 32. The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05. Executive Order B-30-15 establishes an interim goal to reduce GHG emissions to 40 percent below 1990 levels by 2030.

The 2030 goal was codified under SB 32 and is now addressed by the 2017 Scoping Plan Update. The new plan provides a strategy that is capable of reaching the SB 32 target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. The Plan Update includes reductions from implementation of SB 375 that applies to VMT from passenger vehicles. Kern County targets for SB 375 are a 5 percent reduction by 2020 and a 10 percent reduction by 2035. SB 375 is implemented with the Kern COG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling in amounts sufficient to achieve the SB 375 targets. The project is a highway commercial use in a location that is suited for its intended purpose of serving the traveling public.

Now that the 2017 Scoping Plan has been adopted, new methodologies and threshold approaches are required to determine the fair-share contributions City development projects would need to make to achieve the 2030 target. In the meantime, however, the discussion under "Consistency with SB 32" below addresses the consistency of the proposed project with SB 32, which provides the statutory underpinning of the 2017 Scoping Plan. The SB 32 target requires GHG emissions to be reduced from 1990 levels. No consensus has been reached around the State on a new quantitative target for new development based on consistency with the SB 32 targets.

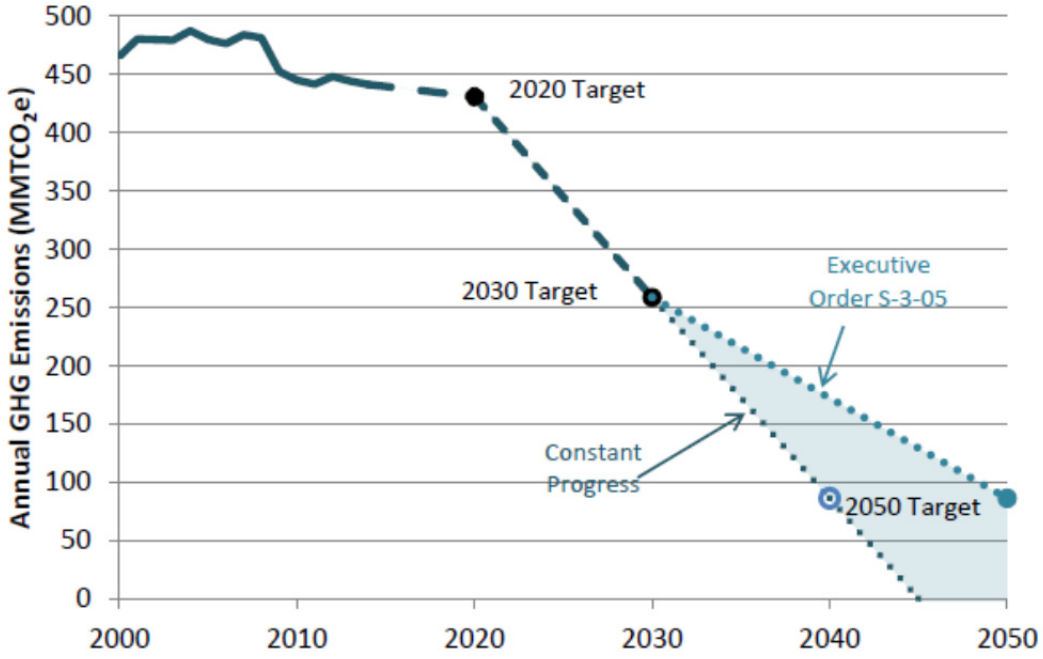
The Executive Order S-3-05 2050 target has not been codified by legislation. Studies have shown that, in order to meet the 2050 target, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the project's impacts further relative to the 2050 goal is speculative for purposes of CEQA (ARB 2014b).

The ARB recognized that AB 32 established an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: "These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate." In addition, ARB's First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed project's post-2020 emissions level to the extent applicable by law:

- **Energy Sector:** Continued improvements in California's appliance and building energy efficiency programs and initiatives, such as the State's zero net energy building goals, would serve to reduce the proposed project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the project's emissions level.
- **Transportation Sector:** Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the project's emissions level.
- **Water Sector:** The project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- **Waste Management Sector:** Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the project's emissions level.

For the reasons described above, the project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets. The trajectory required to achieve the post-2020 targets is shown in Figure 9.

Figure 9: California's Path to Achieving the 2050 Target



Source: ARB 2017 Scoping Plan Update (ARB 2017c)

In his January 2015 inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

These expressions of executive branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the State's environmental policy objectives, particularly those relating to global climate change (Brown 2015). Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target (Energy and Economics 2015).

Given the proportional contribution of mobile source-related GHG emissions to the State's inventory, recent studies also show that relatively new trends—such as the increasing importance of web-based shopping, the emergence of different driving patterns by the "millennial" generation, and the increasing effect of web-based applications on transportation choices—are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. For the reasons described above, the proposed project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets.

Consistency with SB 32

The 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
  - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
  - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)
  - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.
  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.
- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.

- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.
- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 35 provides an analysis of the project's consistency with the 2017 Scoping Plan Update measures.

Table 35: Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
SB 350 50% Renewable Mandate. Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	**Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate.
SB 350 Double Building Energy Efficiency by 2030. This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels	**Not Applicable**. This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency until nonresidential buildings achieve zero net energy.
Low Carbon Fuel Standard. This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent**. Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario) Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent**. Project customers and employees can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CALGreen Code requires electrical service in commercial projects to be EV charger-ready.
Sustainable Freight Action Plan The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.	**Not Applicable**. The measure applies to owners and operators of trucks and freight operations. However, trucks accessing the project site are expected to be made by increasing number of ZEV delivery trucks.

Table 35 (cont.): Consistency with SB 32 2017 Scoping Plan Update

Scoping Plan Measure	Project Consistency
Short-Lived Climate Pollutant (SLCP) Reduction Strategy. The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent**. The project will be accessed by vehicles meeting increasingly stringent particulate matter standards that reduce black carbon compared to older trucks.
SB 375 Sustainable Communities Strategies. Requires Regional Transportation Plans to include a sustainable communities strategy for reduction of per capita vehicle miles traveled. The targets for Fresno County are	**Consistent**. The project will provide commercial development in the region that is consistent with the Regional Transportation Plan/Sustainable Communities Strategy (SCS) assumptions. The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
Post-2020 Cap-and-Trade Program. The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.
Natural and Working Lands Action Plan. The ARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land.	**Not Applicable**. The project is commercial development and will not be considered natural or working lands.
Source: ARB 2017 Scoping Plan Update (ARB 2017c).	

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update; however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand

reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target.

Accordingly, taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

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Appendix A: Modeling Assumptions and Results

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Appendix A: Modeling Assumptions

Bakersfield Commercial Project Modeling Assumptions

Construction Start Date	1-Apr-21		
Construction End Date	31-Dec-21		
First Occupancy	1-Jan-22		
Fueling Station	24 positions	16 automobile	8 Truck
Convenience Store KSF	11,166		
Fast Food w/drive through KSF	3,485		
Maintenance Bldg KSF	10,992		
Total	25,643		
Tractor Parking	99	94 truck	5 RV
Overnight Parking 70%	69.3		
Trucks with TRUs	25%		
Total Trucks with TRUs	75		
Trucks Overnight with TRUs	17.325		
TRU Running Time	50%		
APNs			
517-03-08	10.07		
517-03-06	8.89		
Total	18.96		

	Bldg. SF	**Site Area (Acres)**
Site Area for Buildings	25,643.0	0.59
Landscape Area	121,151	2.78
Paved Parking		15.59
		18.96

Drainage Basin Acres	Balanced Onsite
Material Excavation (CY)	No import or export required

Fuel Throughput		Trucks Fueled/Day
Diesel (million gallons)	12.2	235
Gasoline (million gallons/year)	2.5	
Maintenance Facility Truck Use (per day)	4	

		LHDT1	**LHDT2**	**MHDT**	**HHDT**	
Vehicle Trips	**Trips/Day**	**2-Axle**	**3-Axle**	**4-Axle**	**5-Axle**	
Truck Trips/Day	600	0.26	0.05	0.02	0.67	1.00
Trucks by Weight Classification	300	**77.58**	**14.70**	**6.18**	**201.54**	
Truck Trips/Day by Weight		**155.16**	**29.40**	**12.36**	**403.08**	
Fueling Events/Day	235	**60.77**	**11.52**	**4.84**	**157.87**	

Car Trips		
Total Trips	5112.72	
Truck Trips	600	
Other Vehicle Trips	4512.72	**2256.36**
Trips per Fueling Position (Trucks)	25.00	
Trips per Fueling Position (Other Vehicles)	188.03	

Truck Trip Lengths	**Miles**	2,921,799	
Diverted Link Trips (average)		5,113	16,795,285
Southbound Trips		571.48	
Northbound Trips			
Local Trips	**Default**		

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
Omni	Commercial Development (Truck Stop)	24 Vehicle Fueling Positions	213.03	5113	10.7	50% 129	50% 129	12.12	50% 145	50% 145
sub-total				5,113		129	129		145	145
Adjustments										
Pass-by		15%		767		19	19		22	22
Total				4,346		110	110		123	123

Traffic Study Assumptions

Pass by Trips	15%	Trips on Taft Highway E and W
Diverted Link Trips	88%	Trips from 99 N and S

Trips Generation (24 fuel positions)	213.03	5113
Passby	767	
New after passby	4,346	

Trip Distribution

North 99	35%
South 99	35%
East 119	15%
West 119	15%

1836
2596.000

Diverted Trip Length Analysis

	Miles	Truck Fraction
La Jolla Entrance to H and Taft Highway	0.35	1
Exit 99 N to Taft and H	0.28	0.35
Exit 99 S to Taft and H	0.46	0.35
Ent 99 N from Taft and H	0.31	0.35
Ent 99 S from Taft and H	0.33	0.35
H St Entance to Taft Highway	0.03	0.00
Taft Highway to La Jolla Entrance	0.09	

Measured using Google Earth Measurement Tool

Truck Trip Length

	In	Out	Distance In	Distance Out	Miles Traveled
35 percent of the trucks come from 99 N	105	105	0.63	0.68	137.55
35 percent of trucks come from 99 S	105	105	0.81	0.66	154.35
30 percent of the trucks come from Taft Hwy	90	90	0.09	0.09	15.92
All trucks use La Jolla Truck entrance	300	300			307.82
Total	600				
Average Diverted Link Trip Length					**0.51**
Trips/Fuel Position	25.00				

Passenger Vehicle Trip Length

Passenger Vehicle Trips/Day	3,971.19	88% diverted
Trips per Fuel Position	165.466400	

	In	Out	Distance In	Distance Out	Miles Traveled
35 percent cars from 99 N	695	695	0.31	0.36	468.41
35 percent cars from 99 S	695	695	0.49	0.34	579.61
15 percent cars from Taft Hwy W	298	298	0.03	0.03	19.07
15 percent cars from Taft Hwy E	298	298	0.03	0.03	19.07
	1986	1986			1086.15

Average Diverted Link Trip Distance (miles) **0.27**

Other Trips by Passenger Vehicles	541.53	12% regular trips default trip lengths
Trips per Fuel Position	22.56	

Bakersfield Commercial Project

Default Construction Schedule

PhaseNumber	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	NumDays
1	Site Preparation	Site Preparatio	2021/04/01	2021/04/14	5	10
2	Grading	Grading	2021/04/15	2021/05/26	5	30
3	Building Construction	Building Const	2021/05/27	2022/07/20	5	300
4	Paving	Paving	2022/07/21	2022/08/17	5	20
5	Architectural Coating	Architectural C	2022/08/18	2022/09/14	5	20

Ajdusted Construction Schedule

PhaseNumber	PhaseName	PhaseType	PhaseStartDate	PhaseEndDate	NumDaysWeek	NumDays
1	Site Preparation	Site Preparation			5	10
2	Grading	Grading			5	30
3	Building Construction	Building Construction			5	130
4	Paving	Paving			5	15
5	Architectural Coating	Architectural Coating			5	10

Ajdusted Equipment Usage

PhaseName	OffRoad Equipment Type	OffRoad Equipment Unit Amount	UsageHours	Days/Phase	Hours Per Phase	Adjusted Days	Adjusted Equip No.	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	10	240	10	3	247	0.4
Site Preparation	Tractors/Loaders/Backh	4	8	10	320	10	4	97	0.37
Grading	Excavators	2	8	30	480	30	2	158	0.38
Grading	Graders	1	8	30	240	30	1	187	0.41
Grading	Rubber Tired Dozers	1	8	30	240	30	1	247	0.4
Grading	Scrapers	2	8	30	480	30	2	367	0.48
Grading	Tractors/Loaders/Backh	2	8	30	480	30	2	97	0.37
Building Construction	Cranes	1	7	300	2100	130	2	231	0.29
Building Construction	Forklifts	3	8	300	7200	130	7	89	0.2
Building Construction	Generator Sets	1	8	300	2400	130	2	84	0.74
Building Construction	Tractors/Loaders/Backh	3	7	300	6300	130	7	97	0.37
Building Construction	Welders	1	8	300	2400	130	2	46	0.45
Paving	Pavers	2	8	20	320	15	3	130	0.42
Paving	Paving Equipment	2	8	20	320	15	3	132	0.36
Paving	Rollers	2	8	20	320	15	3	80	0.38
Architectural Coating	Air Compressors	1	6	20	120	10	2	78	0.48

Bakersfield Commercial Project Fleet Mix Allocation

Land Use Assumptions

LandUseType	LandUseSubType	LandUseUnitAmou	LandUseSizeMetric
Retail	Conv w Gas Pumps	24	1000sqft

							LHD1	LHD2	OBUS Frac	UBUS Frac	SBUS Frac	MH Frac	MHD	HHD Frac	Diff to Allocate
Adjusted Fleet Mix for No HDT Trucks		**LDA**	**LDT1**	**LDT2**	**MDV**	**Total**									
Default Fleet Mix		0.483371	0.03038	0.169336	0.116038	0.799125	0.018013	0.005928	0.00162	0.001664	0.000931	0	0.019788	0.146278	0.194222
Adjusted Fleet Mix		0.600851	0.037764	0.210492	0.144240	0.993347									0.194222
						0.194222									

2022 CalEEMod Default Fleet Mix

	EmissionType	**LDA**	**LDT1**	**LDT2**	**MDV**	**LHD1**	**LHD2**	**MHD**	**HHD**	**OBUS**	**UBUS**	**MCY**	**SBUS**	**MH**	
Default Fleet Mix	FleetMix	0.483371	0.03038	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.00162	0.001664	0.005839	0.000931	0.000816	0.200877
Revised Fleet Mix		**0.600851**	**0.037764**	**0.210492**	0.144240	0	0	0.000000	**0.000000**	**0**	**0**	0.005839	**0**	**0.000816**	1.000002

Emission Summary

Construction Emissions Annual

	Tons/Year					
	ROG	**Nox**	**CO**	**SO2**	**PM10**	**PM2.5**
2021	0.74	4.53	3.84	0.01	0.66	0.35

Operational Emissions

	Tons/Year					
	ROG	**Nox**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	0.18	0.00	0.00	0.00	0.00	0.00
Energy	0.01	0.05	0.04	0.00	0.00	0.00
Mobile Passenger	0.80	0.27	3.48	0.00	0.26	0.07
Mobile Truck	0.20	7.74	0.98	0.01	0.05	0.02
Total	**1.18**	**8.06**	**4.50**	**0.02**	**0.32**	**14.07**
Mobile Passenger Vehicles						
Mobile Passenger	0.70	0.22	2.88	0.00	0.15	0.04
Mobile Passenger Diverted	0.10	0.05	0.60	0.00	0.11	0.03
Total	**0.80**	**0.27**	**3.48**	**0.00**	**0.26**	**0.07**

Construction Daily Emissions

	Pounds Per Day (Summer)					
	ROG	**Nox**	**CO**	**SO2**	**PM10**	**PM2.5**
2021	**49.55**	53.14	**48.46**	**0.13**	10.32	6.39

	Pounds Per Day (Winter)					
	ROG	**Nox**	**CO**	**SO2**	**PM10**	**PM2.5**
2021	49.53	**53.36**	47.23	0.12	10.32	6.39

Operations Daily Emissions

	Pounds per Day (Summer)					
	ROG	**Nox**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	0.97	0.00	0.01	0.00	0.00	0.00
Energy	0.03	0.29	0.24	0.00	0.02	0.02
Mobile Passenger	6.16	1.38	17.24	0.02	1.45	0.41
Mobile Truck	2.13	43.14	4.71	0.07	0.32	0.12
Total	**9.29**	**44.81**	**22.20**	**0.09**	**1.79**	**0.55**
Mobile Passenger Vehicles						
Mobile Passenger	5.38	1.12	13.93	0.01	0.84	0.24
Mobile Passenger Diverted	0.78	0.26	3.32	0.01	0.61	0.17
Total	**6.16**	**1.38**	**17.24**	**0.02**	**1.45**	**0.41**

	Pounds per Day (Winter)					
	ROG	**Nox**	**CO**	**SO2**	**PM10**	**PM2.5**
Area	1.02	0.00	0.01	0.00	0.00	0.00
Energy	0.03	0.29	0.24	0.00	0.02	0.02
Mobile Passenger	3.98	1.59	21.80	0.02	1.45	0.41
Mobile Truck	1.19	41.93	6.58	0.06	0.30	0.11
Total	**6.23**	**43.80**	**28.63**	**0.08**	**1.77**	**0.53**

Mobile Passenger Vehicles

Mobile Passenger	3.47	1.29	18.23	0.01	0.84	0.24
Mobile Passenger Diverted	0.51	0.30	3.57	0.01	0.61	0.17
Total	**3.98**	**1.59**	**21.80**	**0.02**	**1.45**	**0.41**

Construction GHG Emissions

Year	**MTCO2e**
2021	857.73
Total	**857.73**
Amortized over 30 years	28.59

Operational GHG Emissions 2022

	BAU (MTCO2e)	**2022 (MTCO2e)**	**Percent Reduction**
Area	0.00	0.00	4.4%
Energy	211.89	127.87	39.7%
Mobile Passenger Veh	440.63	303.87	31.0%
Mobile Truck	1,113.71	994.46	10.7%
Waste	41.27	30.95	25.0%
Water	7.76	4.21	45.8%
Total	**1,815.26**	**1,461.36**	**19.5%**
Construction	28.59	28.59	0.0%
Total with Amortized Constr	**1,843.85**	**1,489.95**	**19.2%**

Reduction from BAU **353.89**

Mobile sources in 2020 are reduced by 10 percent for the LCFS
Mobile sources in 2030 are reduced by 18 percent for LCFS

Mobile Passenger Veh	297.32	205.68
Mobile Passenger Veh	143.31	98.19
Total	**440.63**	**303.87**

Operational GHG Emissions 2030

	BAU (MTCO2e)	**2030 (MTCO2e)**	**Percent Reduction**
Area	0.00	0.00	4.4%
Energy	211.89	127.87	39.7%
Mobile Passenger	440.63	210.43	52.2%
Mobile Truck	1,113.71	813.60	26.9%
Waste	41.27	30.95	25.0%
Water	7.76	4.21	45.8%
Total	**1,815.26**	**1,187.06**	**34.6%**
Construction	28.59	28.59	0.0%
Total with Amortized Constr	**1,843.85**	**1,215.65**	**34.1%**
		628.20	

Mobile Passenger	297.32	142.52
Mobile Passenger	143.31	67.91
Total	**440.63**	**210.43**

Appendix A: CalEEMod Output

CalEEMod Output

Construction and Operations - Passenger Vehicles (Annual)

Bakersfield Commercial Project

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project - Kern-San Joaquin County, Annual

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Off-road Equipment - Adjusted equipment number to conserve default hours with shorter schedule

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Architectural Coating - Rule 4601 compliant coatings

Area Coating - Rule 4601 compliant coatings

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	65
tblAreaCoating	Area_EF_Nonresidential_Interior	150	65
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	130.00
tblConstructionPhase	NumDays	20.00	15.00
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00

tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00

tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021	0.7407	4.5309	3.8406	9.5400e-003	0.4665	0.1889	0.6554	0.1703	0.1764	0.3468	0.0000	854.1814	854.1814	0.1421	0.0000	857.7327
Maximum	**0.7407**	**4.5309**	**3.8406**	**9.5400e-003**	**0.4665**	**0.1889**	**0.6554**	**0.1703**	**0.1764**	**0.3468**	**0.0000**	**854.1814**	**854.1814**	**0.1421**	**0.0000**	**857.7327**

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					
2021	0.7407	4.5309	3.8406	9.5400e-003	0.3453	0.1889	0.5342	0.1133	0.1764	0.2898	0.0000	854.1809	854.1809	0.1421	0.0000	857.7322
Maximum	**0.7407**	**4.5309**	**3.8406**	**9.5400e-003**	**0.3453**	**0.1889**	**0.5342**	**0.1133**	**0.1764**	**0.2898**	**0.0000**	**854.1809**	**854.1809**	**0.1421**	**0.0000**	**857.7322**

	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**	**25.99**	**0.00**	**18.50**	**33.45**	**0.00**	**16.43**	**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	4-1-2021	6-30-2021	1.7216	1.7216
2	7-1-2021	9-30-2021	1.9410	1.9410
		Highest	1.9410	1.9410

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	0.1763	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299
Waste						0.0000	0.0000		0.0000	0.0000	16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water						0.0000	0.0000		0.0000	0.0000	0.7428	2.0600	2.8028	0.0765	1.8400e-003	5.2618
Total	**0.8772**	**0.2703**	**2.9238**	**2.8800e-003**	**0.1454**	**8.5800e-003**	**0.1540**	**0.0386**	**8.2200e-003**	**0.0468**	**17.4022**	**357.2207**	**374.6229**	**1.0837**	**4.0900e-003**	**402.9339**

2.2 Overall Operational

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	0.1763	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299
Waste						0.0000	0.0000		0.0000	0.0000	12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water						0.0000	0.0000		0.0000	0.0000	0.5942	1.6480	2.2422	0.0612	1.4700e-003	4.2095
Total	**0.8772**	**0.2703**	**2.9238**	**2.8800e-003**	**0.1454**	**8.5800e-003**	**0.1540**	**0.0386**	**8.2200e-003**	**0.0468**	**13.0888**	**356.8087**	**369.8975**	**0.8223**	**3.7200e-003**	**391.5633**

	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**	**24.79**	**0.12**	**1.26**	**24.12**	**9.05**	**2.82**

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	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	5/26/2021	5	30	
3	Building Construction	Building Construction	5/27/2021	11/24/2021	5	130	
4	Paving	Paving	11/25/2021	12/15/2021	5	15	
5	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

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	2	7.00	231	0.29
Building Construction	Forklifts	7	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	7	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	3	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Architectural Coating	Air Compressors	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	345.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

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	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

3.2 Site Preparation - 2021

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	3.2000e-004	2.1000e-004	2.1200e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6419	0.6419	2.0000e-005	0.0000	0.6423
Total	**3.2000e-004**	**2.1000e-004**	**2.1200e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**2.0000e-005**	**0.0000**	**0.6423**

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					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0407**	**0.0102**	**0.0509**	**0.0223**	**9.4000e-003**	**0.0317**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

3.2 Site Preparation - 2021

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	3.2000e-004	2.1000e-004	2.1200e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6419	0.6419	2.0000e-005	0.0000	0.6423
Total	**3.2000e-004**	**2.1000e-004**	**2.1200e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**2.0000e-005**	**0.0000**	**0.6423**

3.3 Grading - 2021

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7425	81.7425	0.0264	0.0000	82.4034
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1301**	**0.0298**	**0.1599**	**0.0540**	**0.0274**	**0.0814**	**0.0000**	**81.7425**	**81.7425**	**0.0264**	**0.0000**	**82.4034**

3.3 Grading - 2021

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	1.0600e-003	6.9000e-004	7.0600e-003	2.0000e-005	2.4200e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1396	2.1396	5.0000e-005	0.0000	2.1409
Total	**1.0600e-003**	**6.9000e-004**	**7.0600e-003**	**2.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4300e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1396**	**2.1396**	**5.0000e-005**	**0.0000**	**2.1409**

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					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7424	81.7424	0.0264	0.0000	82.4033
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.0586**	**0.0298**	**0.0883**	**0.0243**	**0.0274**	**0.0517**	**0.0000**	**81.7424**	**81.7424**	**0.0264**	**0.0000**	**82.4033**

3.3 Grading - 2021

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	1.0600e-003	6.9000e-004	7.0600e-003	2.0000e-005	2.4200e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1396	2.1396	5.0000e-005	0.0000	2.1409
Total	**1.0600e-003**	**6.9000e-004**	**7.0600e-003**	**2.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4300e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1396**	**2.1396**	**5.0000e-005**	**0.0000**	**2.1409**

3.4 Building Construction - 2021

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	0.2662	2.4506	2.3592	3.7800e-003		0.1364	0.1364		0.1280	0.1280	0.0000	325.3827	325.3827	0.0805	0.0000	327.3950
Total	**0.2662**	**2.4506**	**2.3592**	**3.7800e-003**		**0.1364**	**0.1364**		**0.1280**	**0.1280**	**0.0000**	**325.3827**	**325.3827**	**0.0805**	**0.0000**	**327.3950**

3.4 Building Construction - 2021

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	0.0288	0.9673	0.1818	2.5200e-003	0.0586	2.5800e-003	0.0612	0.0169	2.4700e-003	0.0194	0.0000	239.2813	239.2813	0.0183	0.0000	239.7390
Worker	0.0795	0.0518	0.5277	1.7700e-003	0.1807	1.2400e-003	0.1820	0.0480	1.1400e-003	0.0491	0.0000	159.9332	159.9332	3.8000e-003	0.0000	160.0282
Total	**0.1083**	**1.0192**	**0.7095**	**4.2900e-003**	**0.2393**	**3.8200e-003**	**0.2431**	**0.0649**	**3.6100e-003**	**0.0685**	**0.0000**	**399.2145**	**399.2145**	**0.0221**	**0.0000**	**399.7672**

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	0.2662	2.4506	2.3592	3.7800e-003		0.1364	0.1364		0.1280	0.1280	0.0000	325.3823	325.3823	0.0805	0.0000	327.3946
Total	**0.2662**	**2.4506**	**2.3592**	**3.7800e-003**		**0.1364**	**0.1364**		**0.1280**	**0.1280**	**0.0000**	**325.3823**	**325.3823**	**0.0805**	**0.0000**	**327.3946**

3.4 Building Construction - 2021

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	0.0288	0.9673	0.1818	2.5200e-003	0.0586	2.5800e-003	0.0612	0.0169	2.4700e-003	0.0194	0.0000	239.2813	239.2813	0.0183	0.0000	239.7390
Worker	0.0795	0.0518	0.5277	1.7700e-003	0.1807	1.2400e-003	0.1820	0.0480	1.1400e-003	0.0491	0.0000	159.9332	159.9332	3.8000e-003	0.0000	160.0282
Total	**0.1083**	**1.0192**	**0.7095**	**4.2900e-003**	**0.2393**	**3.8200e-003**	**0.2431**	**0.0649**	**3.6100e-003**	**0.0685**	**0.0000**	**399.2145**	**399.2145**	**0.0221**	**0.0000**	**399.7672**

3.5 Paving - 2021

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	0.0141	0.1453	0.1649	2.6000e-004		7.6200e-003	7.6200e-003		7.0100e-003	7.0100e-003	0.0000	22.5264	22.5264	7.2900e-003	0.0000	22.7086
Paving	0.0204					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0345**	**0.1453**	**0.1649**	**2.6000e-004**		**7.6200e-003**	**7.6200e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**22.5264**	**22.5264**	**7.2900e-003**	**0.0000**	**22.7086**

3.5 Paving - 2021

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	4.0000e-004	2.6000e-004	2.6500e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8023	0.8023	2.0000e-005	0.0000	0.8028
Total	**4.0000e-004**	**2.6000e-004**	**2.6500e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8023**	**0.8023**	**2.0000e-005**	**0.0000**	**0.8028**

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	0.0141	0.1453	0.1649	2.6000e-004		7.6200e-003	7.6200e-003		7.0100e-003	7.0100e-003	0.0000	22.5264	22.5264	7.2900e-003	0.0000	22.7085
Paving	0.0204					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0345**	**0.1453**	**0.1649**	**2.6000e-004**		**7.6200e-003**	**7.6200e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**22.5264**	**22.5264**	**7.2900e-003**	**0.0000**	**22.7085**

3.5 Paving - 2021

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	4.0000e-004	2.6000e-004	2.6500e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8023	0.8023	2.0000e-005	0.0000	0.8028
Total	**4.0000e-004**	**2.6000e-004**	**2.6500e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8023**	**0.8023**	**2.0000e-005**	**0.0000**	**0.8028**

3.6 Architectural Coating - 2021

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					
Archit. Coating	0.2442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.2464**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.6 Architectural Coating - 2021

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	1.2200e-003	8.0000e-004	8.1200e-003	3.0000e-005	2.7800e-003	2.0000e-005	2.8000e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total	**1.2200e-003**	**8.0000e-004**	**8.1200e-003**	**3.0000e-005**	**2.7800e-003**	**2.0000e-005**	**2.8000e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

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	0.2442					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.2464**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.6 Architectural Coating - 2021

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	1.2200e-003	8.0000e-004	8.1200e-003	3.0000e-005	2.7800e-003	2.0000e-005	2.8000e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total	**1.2200e-003**	**8.0000e-004**	**8.1200e-003**	**3.0000e-005**	**2.7800e-003**	**2.0000e-005**	**2.8000e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

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	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299
Unmitigated	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
NaturalGas Mitigated	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403	1.2400e-003	0.0113	9.4500e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476	6.4000e-004	5.8600e-003	4.9200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314	3.9500e-003	0.0360	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-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
Parking Lot	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		**5.8300e-003**	**0.0531**	**0.0446**	**3.3000e-004**		**4.0300e-003**	**4.0300e-003**		**4.0300e-003**	**4.0300e-003**	**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403	1.2400e-003	0.0113	9.4500e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476	6.4000e-004	5.8600e-003	4.9200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314	3.9500e-003	0.0360	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-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
Parking Lot	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		**5.8300e-003**	**0.0531**	**0.0446**	**3.3000e-004**		**4.0300e-003**	**4.0300e-003**		**4.0300e-003**	**4.0300e-003**	**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

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					
Mitigated	0.1763	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Unmitigated	0.1763	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003

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	0.0244					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total	**0.1763**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

6.2 Area by SubCategory

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	0.0244					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total	**0.1763**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2422	0.0612	1.4700e-003	4.2095
Unmitigated	2.8028	0.0765	1.8400e-003	5.2618

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	1.3557	0.0338	8.1000e-004	2.4426
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	1.1180	0.0345	8.3000e-004	2.2264
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8028**	**0.0765**	**1.8400e-003**	**5.2619**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	1.0846	0.0270	6.5000e-004	1.9541
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.2633	6.5600e-003	1.6000e-004	0.4743
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	0.8944	0.0276	6.6000e-004	1.7811
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.2422**	**0.0612**	**1.4700e-003**	**4.2095**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

CalEEMod Output

Operations – Passenger Vehicles Diverted Link Trips (Annual)

Bakersfield Commercial Project

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project - Kern-San Joaquin County, Annual

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Off-road Equipment - Adjusted equipment number to conserve default hours with shorter schedule

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	130.00
tblConstructionPhase	NumDays	20.00	15.00
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00

tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46

tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021	0.8417	4.5309	3.8406	9.5400e-003	0.4665	0.1889	0.6554	0.1703	0.1764	0.3468	0.0000	854.1814	854.1814	0.1421	0.0000	857.7327
Maximum	**0.8417**	**4.5309**	**3.8406**	**9.5400e-003**	**0.4665**	**0.1889**	**0.6554**	**0.1703**	**0.1764**	**0.3468**	**0.0000**	**854.1814**	**854.1814**	**0.1421**	**0.0000**	**857.7327**

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					
2021	0.8417	4.5309	3.8406	9.5400e-003	0.3453	0.1889	0.5342	0.1133	0.1764	0.2898	0.0000	854.1809	854.1809	0.1421	0.0000	857.7322
Maximum	**0.8417**	**4.5309**	**3.8406**	**9.5400e-003**	**0.3453**	**0.1889**	**0.5342**	**0.1133**	**0.1764**	**0.2898**	**0.0000**	**854.1809**	**854.1809**	**0.1421**	**0.0000**	**857.7322**

	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**	**25.99**	**0.00**	**18.50**	**33.45**	**0.00**	**16.43**	**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	4-1-2021	6-30-2021	1.7216	1.7216
2	7-1-2021	9-30-2021	1.9410	1.9410
		Highest	1.9410	1.9410

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	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299
Waste						0.0000	0.0000		0.0000	0.0000	16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water						0.0000	0.0000		0.0000	0.0000	0.7428	2.0600	2.8028	0.0765	1.8400e-003	5.2618
Total	**0.8873**	**0.2703**	**2.9238**	**2.8800e-003**	**0.1454**	**8.5800e-003**	**0.1540**	**0.0386**	**8.2200e-003**	**0.0468**	**17.4022**	**357.2207**	**374.6229**	**1.0837**	**4.0900e-003**	**402.9339**

2.2 Overall Operational

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	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299
Waste						0.0000	0.0000		0.0000	0.0000	12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water						0.0000	0.0000		0.0000	0.0000	0.5942	1.6480	2.2422	0.0612	1.4700e-003	4.2095
Total	**0.8873**	**0.2703**	**2.9238**	**2.8800e-003**	**0.1454**	**8.5800e-003**	**0.1540**	**0.0386**	**8.2200e-003**	**0.0468**	**13.0888**	**356.8087**	**369.8975**	**0.8223**	**3.7200e-003**	**391.5633**

	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**	**24.79**	**0.12**	**1.26**	**24.12**	**9.05**	**2.82**

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	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	5/26/2021	5	30	
3	Building Construction	Building Construction	5/27/2021	11/24/2021	5	130	
4	Paving	Paving	11/25/2021	12/15/2021	5	15	
5	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

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	2	7.00	231	0.29
Building Construction	Forklifts	7	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	7	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	3	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Architectural Coating	Air Compressors	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	345.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

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	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

3.2 Site Preparation - 2021

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	3.2000e-004	2.1000e-004	2.1200e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6419	0.6419	2.0000e-005	0.0000	0.6423
Total	**3.2000e-004**	**2.1000e-004**	**2.1200e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**2.0000e-005**	**0.0000**	**0.6423**

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					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0407**	**0.0102**	**0.0509**	**0.0223**	**9.4000e-003**	**0.0317**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

3.2 Site Preparation - 2021

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	3.2000e-004	2.1000e-004	2.1200e-003	1.0000e-005	7.3000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6419	0.6419	2.0000e-005	0.0000	0.6423
Total	**3.2000e-004**	**2.1000e-004**	**2.1200e-003**	**1.0000e-005**	**7.3000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6419**	**0.6419**	**2.0000e-005**	**0.0000**	**0.6423**

3.3 Grading - 2021

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					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7425	81.7425	0.0264	0.0000	82.4034
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1301**	**0.0298**	**0.1599**	**0.0540**	**0.0274**	**0.0814**	**0.0000**	**81.7425**	**81.7425**	**0.0264**	**0.0000**	**82.4034**

3.3 Grading - 2021

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	1.0600e-003	6.9000e-004	7.0600e-003	2.0000e-005	2.4200e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1396	2.1396	5.0000e-005	0.0000	2.1409
Total	**1.0600e-003**	**6.9000e-004**	**7.0600e-003**	**2.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4300e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1396**	**2.1396**	**5.0000e-005**	**0.0000**	**2.1409**

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					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7424	81.7424	0.0264	0.0000	82.4033
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.0586**	**0.0298**	**0.0883**	**0.0243**	**0.0274**	**0.0517**	**0.0000**	**81.7424**	**81.7424**	**0.0264**	**0.0000**	**82.4033**

3.3 Grading - 2021

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	1.0600e-003	6.9000e-004	7.0600e-003	2.0000e-005	2.4200e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1396	2.1396	5.0000e-005	0.0000	2.1409
Total	**1.0600e-003**	**6.9000e-004**	**7.0600e-003**	**2.0000e-005**	**2.4200e-003**	**2.0000e-005**	**2.4300e-003**	**6.4000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1396**	**2.1396**	**5.0000e-005**	**0.0000**	**2.1409**

3.4 Building Construction - 2021

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	0.2662	2.4506	2.3592	3.7800e-003		0.1364	0.1364		0.1280	0.1280	0.0000	325.3827	325.3827	0.0805	0.0000	327.3950
Total	**0.2662**	**2.4506**	**2.3592**	**3.7800e-003**		**0.1364**	**0.1364**		**0.1280**	**0.1280**	**0.0000**	**325.3827**	**325.3827**	**0.0805**	**0.0000**	**327.3950**

3.4 Building Construction - 2021

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	0.0288	0.9673	0.1818	2.5200e-003	0.0586	2.5800e-003	0.0612	0.0169	2.4700e-003	0.0194	0.0000	239.2813	239.2813	0.0183	0.0000	239.7390
Worker	0.0795	0.0518	0.5277	1.7700e-003	0.1807	1.2400e-003	0.1820	0.0480	1.1400e-003	0.0491	0.0000	159.9332	159.9332	3.8000e-003	0.0000	160.0282
Total	**0.1083**	**1.0192**	**0.7095**	**4.2900e-003**	**0.2393**	**3.8200e-003**	**0.2431**	**0.0649**	**3.6100e-003**	**0.0685**	**0.0000**	**399.2145**	**399.2145**	**0.0221**	**0.0000**	**399.7672**

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	0.2662	2.4506	2.3592	3.7800e-003		0.1364	0.1364		0.1280	0.1280	0.0000	325.3823	325.3823	0.0805	0.0000	327.3946
Total	**0.2662**	**2.4506**	**2.3592**	**3.7800e-003**		**0.1364**	**0.1364**		**0.1280**	**0.1280**	**0.0000**	**325.3823**	**325.3823**	**0.0805**	**0.0000**	**327.3946**

3.4 Building Construction - 2021

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	0.0288	0.9673	0.1818	2.5200e-003	0.0586	2.5800e-003	0.0612	0.0169	2.4700e-003	0.0194	0.0000	239.2813	239.2813	0.0183	0.0000	239.7390
Worker	0.0795	0.0518	0.5277	1.7700e-003	0.1807	1.2400e-003	0.1820	0.0480	1.1400e-003	0.0491	0.0000	159.9332	159.9332	3.8000e-003	0.0000	160.0282
Total	**0.1083**	**1.0192**	**0.7095**	**4.2900e-003**	**0.2393**	**3.8200e-003**	**0.2431**	**0.0649**	**3.6100e-003**	**0.0685**	**0.0000**	**399.2145**	**399.2145**	**0.0221**	**0.0000**	**399.7672**

3.5 Paving - 2021

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	0.0141	0.1453	0.1649	2.6000e-004		7.6200e-003	7.6200e-003		7.0100e-003	7.0100e-003	0.0000	22.5264	22.5264	7.2900e-003	0.0000	22.7086
Paving	0.0204					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0345**	**0.1453**	**0.1649**	**2.6000e-004**		**7.6200e-003**	**7.6200e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**22.5264**	**22.5264**	**7.2900e-003**	**0.0000**	**22.7086**

3.5 Paving - 2021

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	4.0000e-004	2.6000e-004	2.6500e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8023	0.8023	2.0000e-005	0.0000	0.8028
Total	**4.0000e-004**	**2.6000e-004**	**2.6500e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8023**	**0.8023**	**2.0000e-005**	**0.0000**	**0.8028**

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	0.0141	0.1453	0.1649	2.6000e-004		7.6200e-003	7.6200e-003		7.0100e-003	7.0100e-003	0.0000	22.5264	22.5264	7.2900e-003	0.0000	22.7085
Paving	0.0204					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0345**	**0.1453**	**0.1649**	**2.6000e-004**		**7.6200e-003**	**7.6200e-003**		**7.0100e-003**	**7.0100e-003**	**0.0000**	**22.5264**	**22.5264**	**7.2900e-003**	**0.0000**	**22.7085**

3.5 Paving - 2021

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	4.0000e-004	2.6000e-004	2.6500e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.8023	0.8023	2.0000e-005	0.0000	0.8028
Total	**4.0000e-004**	**2.6000e-004**	**2.6500e-003**	**1.0000e-005**	**9.1000e-004**	**1.0000e-005**	**9.1000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.8023**	**0.8023**	**2.0000e-005**	**0.0000**	**0.8028**

3.6 Architectural Coating - 2021

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					
Archit. Coating	0.3452					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.3474**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.6 Architectural Coating - 2021

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	1.2200e-003	8.0000e-004	8.1200e-003	3.0000e-005	2.7800e-003	2.0000e-005	2.8000e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total	**1.2200e-003**	**8.0000e-004**	**8.1200e-003**	**3.0000e-005**	**2.7800e-003**	**2.0000e-005**	**2.8000e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

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	0.3452					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**0.3474**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.6 Architectural Coating - 2021

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	1.2200e-003	8.0000e-004	8.1200e-003	3.0000e-005	2.7800e-003	2.0000e-005	2.8000e-003	7.4000e-004	2.0000e-005	7.6000e-004	0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total	**1.2200e-003**	**8.0000e-004**	**8.1200e-003**	**3.0000e-005**	**2.7800e-003**	**2.0000e-005**	**2.8000e-003**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

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	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299
Unmitigated	0.6950	0.2173	2.8787	2.5600e-003	0.1454	4.5500e-003	0.1499	0.0386	4.1900e-003	0.0428	0.0000	228.1400	228.1400	0.0156	0.0000	228.5299

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
NaturalGas Mitigated	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403	1.2400e-003	0.0113	9.4500e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476	6.4000e-004	5.8600e-003	4.9200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314	3.9500e-003	0.0360	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-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
Parking Lot	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		**5.8300e-003**	**0.0531**	**0.0446**	**3.3000e-004**		**4.0300e-003**	**4.0300e-003**		**4.0300e-003**	**4.0300e-003**	**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403	1.2400e-003	0.0113	9.4500e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476	6.4000e-004	5.8600e-003	4.9200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314	3.9500e-003	0.0360	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-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
Parking Lot	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		**5.8300e-003**	**0.0531**	**0.0446**	**3.3000e-004**		**4.0300e-003**	**4.0300e-003**		**4.0300e-003**	**4.0300e-003**	**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

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					
Mitigated	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Unmitigated	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003

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	0.0345					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total	**0.1864**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

6.2 Area by SubCategory

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	0.0345					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total	**0.1864**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2422	0.0612	1.4700e-003	4.2095
Unmitigated	2.8028	0.0765	1.8400e-003	5.2618

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	1.3557	0.0338	8.1000e-004	2.4426
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	1.1180	0.0345	8.3000e-004	2.2264
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8028**	**0.0765**	**1.8400e-003**	**5.2619**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	1.0846	0.0270	6.5000e-004	1.9541
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.2633	6.5600e-003	1.6000e-004	0.4743
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	0.8944	0.0276	6.6000e-004	1.7811
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.2422**	**0.0612**	**1.4700e-003**	**4.2095**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

CalEEMod Output

Operations - Passenger Vehicles Default Trip Length (Annual)

Bakersfield Commercial Passenger Vehicles

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	24.00	Pump	0.08	3,388.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors 2020

Land Use -

Construction Phase - Operations only run

Vehicle Trips - Passenger vehicles regular trips

Fleet Mix - Passenger Vehicles only

Bakersfield Commercial Passenger Vehicles - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	ST_TR	204.47	22.56
tblVehicleTrips	SU_TR	166.88	22.56
tblVehicleTrips	WD_TR	542.60	22.56

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					
2021	0.0241	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**0.0241**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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					
2021	0.0241	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**0.0241**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

	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**

Bakersfield Commercial Passenger Vehicles - Kern-San Joaquin County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	7-1-2021	9-30-2021	0.0279	0.0279
		Highest	0.0279	0.0279

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	0.0156	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Energy	2.0000e-004	1.7800e-003	1.4900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	5.5670	5.5670	3.5000e-004	1.0000e-004	5.6050
Mobile	0.1023	0.0505	0.6032	1.2100e-003	0.1082	1.1000e-003	0.1093	0.0287	1.0200e-003	0.0297	0.0000	109.0017	109.0017	4.1300e-003	0.0000	109.1050
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0796	0.2495	0.3291	8.2000e-003	2.0000e-004	0.5929
Total	**0.1181**	**0.0523**	**0.6049**	**1.2200e-003**	**0.1082**	**1.2400e-003**	**0.1094**	**0.0287**	**1.1600e-003**	**0.0299**	**0.0796**	**114.8186**	**114.8982**	**0.0127**	**3.0000e-004**	**115.3033**

2.2 Overall Operational

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	0.0156	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Energy	2.0000e-004	1.7800e-003	1.4900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	5.5670	5.5670	3.5000e-004	1.0000e-004	5.6050
Mobile	0.1023	0.0505	0.6032	1.2100e-003	0.1082	1.1000e-003	0.1093	0.0287	1.0200e-003	0.0297	0.0000	109.0017	109.0017	4.1300e-003	0.0000	109.1050
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0796	0.2495	0.3291	8.2000e-003	2.0000e-004	0.5929
Total	**0.1181**	**0.0523**	**0.6049**	**1.2200e-003**	**0.1082**	**1.2400e-003**	**0.1094**	**0.0287**	**1.1600e-003**	**0.0299**	**0.0796**	**114.8186**	**114.8982**	**0.0127**	**3.0000e-004**	**115.3033**

	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	Architectural Coating	Architectural Coating	9/14/2021	9/20/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 5,082; Non-Residential Outdoor: 1,694; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

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					
Archit. Coating	0.0236					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**0.0241**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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	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
Total	**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**

3.2 Architectural Coating - 2021

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	0.0236					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**0.0241**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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	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
Total	**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**

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	0.1023	0.0505	0.6032	1.2100e-003	0.1082	1.1000e-003	0.1093	0.0287	1.0200e-003	0.0297	0.0000	109.0017	109.0017	4.1300e-003	0.0000	109.1050
Unmitigated	0.1023	0.0505	0.6032	1.2100e-003	0.1082	1.1000e-003	0.1093	0.0287	1.0200e-003	0.0297	0.0000	109.0017	109.0017	4.1300e-003	0.0000	109.1050

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	541.44	541.44	541.44	290,431	290,431
Total	541.44	541.44	541.44	290,431	290,431

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
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816

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	3.6324	3.6324	3.1000e-004	6.0000e-005	3.6589
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3.6324	3.6324	3.1000e-004	6.0000e-005	3.6589
NaturalGas Mitigated	2.0000e-004	1.7800e-003	1.4900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
NaturalGas Unmitigated	2.0000e-004	1.7800e-003	1.4900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461

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					
Convenience Market With Gas Pumps	36253.7	2.0000e-004	1.7800e-003	1.4900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
Total		**2.0000e-004**	**1.7800e-003**	**1.4900e-003**	**1.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**1.9346**	**1.9346**	**4.0000e-005**	**4.0000e-005**	**1.9461**

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					
Convenience Market With Gas Pumps	36253.7	2.0000e-004	1.7800e-003	1.4900e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
Total		**2.0000e-004**	**1.7800e-003**	**1.4900e-003**	**1.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**1.9346**	**1.9346**	**4.0000e-005**	**4.0000e-005**	**1.9461**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	27613.8	3.6324	3.1000e-004	6.0000e-005	3.6589
Total		**3.6324**	**3.1000e-004**	**6.0000e-005**	**3.6589**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	27613.8	3.6324	3.1000e-004	6.0000e-005	3.6589
Total		**3.6324**	**3.1000e-004**	**6.0000e-005**	**3.6589**

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					
Mitigated	0.0156	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Unmitigated	0.0156	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004

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	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Total	**0.0156**	**0.0000**	**2.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.0000**	**4.6000e-004**

6.2 Area by SubCategory

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	2.3600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Total	**0.0156**	**0.0000**	**2.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.0000**	**4.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3291	8.2000e-003	2.0000e-004	0.5929
Unmitigated	0.3291	8.2000e-003	2.0000e-004	0.5929

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Total		**0.3291**	**8.2000e-003**	**2.0000e-004**	**0.5929**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Total		**0.3291**	**8.2000e-003**	**2.0000e-004**	**0.5929**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

CalEEMod Output

Operations - Truck Only (Annual)

Bakersfield Commercial Project Truck Only

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project Truck Only - Kern-San Joaquin County, Annual

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Truck only run

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Vehicle Trips - Traffic Study Trip Generation Rate

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Truck Only Run

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	1.00
tblFleetMix	HHD	0.15	0.67
tblFleetMix	LDA	0.48	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.02	0.26
tblFleetMix	LHD2	5.9280e-003	0.05
tblFleetMix	MCY	5.8390e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.1600e-004	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00

tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CC_TL	7.30	0.51
tblVehicleTrips	CNW_TL	7.30	0.51
tblVehicleTrips	CW_TL	9.50	0.51
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	25.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	25.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	25.00
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021	0.3454	8.4000e-004	1.7200e-003	0.0000	2.8000e-004	5.0000e-005	3.3000e-004	7.0000e-005	5.0000e-005	1.2000e-004	0.0000	0.3737	0.3737	1.0000e-005	0.0000	0.3741
Maximum	**0.3454**	**8.4000e-004**	**1.7200e-003**	**0.0000**	**2.8000e-004**	**5.0000e-005**	**3.3000e-004**	**7.0000e-005**	**5.0000e-005**	**1.2000e-004**	**0.0000**	**0.3737**	**0.3737**	**1.0000e-005**	**0.0000**	**0.3741**

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					
2021	0.3454	8.4000e-004	1.7200e-003	0.0000	2.8000e-004	5.0000e-005	3.3000e-004	7.0000e-005	5.0000e-005	1.2000e-004	0.0000	0.3737	0.3737	1.0000e-005	0.0000	0.3741
Maximum	**0.3454**	**8.4000e-004**	**1.7200e-003**	**0.0000**	**2.8000e-004**	**5.0000e-005**	**3.3000e-004**	**7.0000e-005**	**5.0000e-005**	**1.2000e-004**	**0.0000**	**0.3737**	**0.3737**	**1.0000e-005**	**0.0000**	**0.3741**

	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)
		Highest		

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	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile	0.2031	7.7360	0.9758	0.0116	0.0478	5.3100e-003	0.0531	0.0133	5.0700e-003	0.0183	0.0000	1,098.2252	1,098.2252	0.2688	0.0000	1,104.9455
Waste						0.0000	0.0000		0.0000	0.0000	16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water						0.0000	0.0000		0.0000	0.0000	0.7428	2.0600	2.8028	0.0765	1.8400e-003	5.2618
Total	**0.3954**	**7.7891**	**1.0209**	**0.0119**	**0.0478**	**9.3400e-003**	**0.0571**	**0.0133**	**9.1000e-003**	**0.0224**	**17.4022**	**1,227.3058**	**1,244.7081**	**1.3369**	**4.0900e-003**	**1,279.3495**

2.2 Overall Operational

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	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile	0.2031	7.7360	0.9758	0.0116	0.0478	5.3100e-003	0.0531	0.0133	5.0700e-003	0.0183	0.0000	1,098.2252	1,098.2252	0.2688	0.0000	1,104.9455
Waste						0.0000	0.0000		0.0000	0.0000	12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water						0.0000	0.0000		0.0000	0.0000	0.5942	1.6480	2.2422	0.0612	1.4700e-003	4.2095
Total	**0.3954**	**7.7891**	**1.0209**	**0.0119**	**0.0478**	**9.3400e-003**	**0.0571**	**0.0133**	**9.1000e-003**	**0.0224**	**13.0888**	**1,226.8938**	**1,239.9826**	**1.0755**	**3.7200e-003**	**1,267.9789**

	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**	**24.79**	**0.03**	**0.38**	**19.56**	**9.05**	**0.89**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coatings	Architectural Coating	10/3/2021	10/4/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coatings	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
Architectural Coatings	1	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coatings - 2021

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					
Archit. Coating	0.3452					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	7.6000e-004	9.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	**0.3453**	**7.6000e-004**	**9.1000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

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	1.2000e-004	8.0000e-005	8.1000e-004	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2461	0.2461	1.0000e-005	0.0000	0.2462
Total	**1.2000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2461**	**0.2461**	**1.0000e-005**	**0.0000**	**0.2462**

3.2 Architectural Coatings - 2021

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	0.3452					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	7.6000e-004	9.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total	**0.3453**	**7.6000e-004**	**9.1000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

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	1.2000e-004	8.0000e-005	8.1000e-004	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2461	0.2461	1.0000e-005	0.0000	0.2462
Total	**1.2000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2461**	**0.2461**	**1.0000e-005**	**0.0000**	**0.2462**

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	0.2031	7.7360	0.9758	0.0116	0.0478	5.3100e-003	0.0531	0.0133	5.0700e-003	0.0183	0.0000	1,098.2252	1,098.2252	0.2688	0.0000	1,104.9455
Unmitigated	0.2031	7.7360	0.9758	0.0116	0.0478	5.3100e-003	0.0531	0.0133	5.0700e-003	0.0183	0.0000	1,098.2252	1,098.2252	0.2688	0.0000	1,104.9455

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	600.00	600.00	600.00	111,384	111,384
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	600.00	600.00	600.00	111,384	111,384

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.51	0.51	0.51	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.000000	0.000000	0.000000	0.000000	0.260000	0.050000	0.020000	0.670000	0.000000	0.000000	0.000000	0.000000	0.000000
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Bakersfield Commercial Project Truck Only - Kern-San Joaquin County, Annual

	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	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
NaturalGas Mitigated	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated	5.8400e-003	0.0531	0.0446	3.2000e-004		4.0300e-003	4.0300e-003		4.0300e-003	4.0300e-003	0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403	1.2400e-003	0.0113	9.4500e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476	6.4000e-004	5.8600e-003	4.9200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314	3.9500e-003	0.0360	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-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
Parking Lot	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		**5.8300e-003**	**0.0531**	**0.0446**	**3.3000e-004**		**4.0300e-003**	**4.0300e-003**		**4.0300e-003**	**4.0300e-003**	**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403	1.2400e-003	0.0113	9.4500e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476	6.4000e-004	5.8600e-003	4.9200e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314	3.9500e-003	0.0360	0.0302	2.2000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-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
Parking Lot	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		**5.8300e-003**	**0.0531**	**0.0446**	**3.3000e-004**		**4.0300e-003**	**4.0300e-003**		**4.0300e-003**	**4.0300e-003**	**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

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					
Mitigated	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Unmitigated	0.1864	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003

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	0.0345					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total	**0.1864**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

6.2 Area by SubCategory

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	0.0345					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1519					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	0.0000	5.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total	**0.1864**	**0.0000**	**5.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2422	0.0612	1.4700e-003	4.2095
Unmitigated	2.8028	0.0765	1.8400e-003	5.2618

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	1.3557	0.0338	8.1000e-004	2.4426
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	1.1180	0.0345	8.3000e-004	2.2264
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8028**	**0.0765**	**1.8400e-003**	**5.2619**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	1.0846	0.0270	6.5000e-004	1.9541
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.2633	6.5600e-003	1.6000e-004	0.4743
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	0.8944	0.0276	6.6000e-004	1.7811
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.2422**	**0.0612**	**1.4700e-003**	**4.2095**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

CalEEMod Output

Construction and Operations (Summer Daily)

Bakersfield Commercial Project

Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project - Kern-San Joaquin County, Summer

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Off-road Equipment - Adjusted equipment number to conserve default hours with shorter schedule

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Architectural Coating - Rule 4601 compliant coatings

Area Coating - Rule 4601 compliant coatings

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	65
tblAreaCoating	Area_EF_Nonresidential_Interior	150	65
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	130.00
tblConstructionPhase	NumDays	20.00	15.00
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00

tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00

tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	49.5505	53.1392	48.4591	0.1275	18.2141	2.1569	20.2596	9.9699	2.0245	11.8517	0.0000	12,630.8750	12,630.8750	1.9470	0.0000	12,674.1677
Maximum	**49.5505**	**53.1392**	**48.4591**	**0.1275**	**18.2141**	**2.1569**	**20.2596**	**9.9699**	**2.0245**	**11.8517**	**0.0000**	**12,630.8750**	**12,630.8750**	**1.9470**	**0.0000**	**12,674.1677**

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	lb/day										lb/day					
2021	49.5505	53.1392	48.4591	0.1275	8.2777	2.1569	10.3231	4.5080	2.0245	6.3899	0.0000	12,630.8750	12,630.8750	1.9470	0.0000	12,674.1677
Maximum	**49.5505**	**53.1392**	**48.4591**	**0.1275**	**8.2777**	**2.1569**	**10.3231**	**4.5080**	**2.0245**	**6.3899**	**0.0000**	**12,630.8750**	**12,630.8750**	**1.9470**	**0.0000**	**12,674.1677**

	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**	**54.55**	**0.00**	**49.05**	**54.78**	**0.00**	**46.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959
Total	**6.3770**	**1.4106**	**14.1753**	**0.0166**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,814.3322**	**1,814.3322**	**0.0903**	**6.3900e-003**	**1,818.4952**

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	lb/day										lb/day					
Area	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959
Total	**6.3770**	**1.4106**	**14.1753**	**0.0166**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,814.3322**	**1,814.3322**	**0.0903**	**6.3900e-003**	**1,818.4952**

	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	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	5/26/2021	5	30	
3	Building Construction	Building Construction	5/27/2021	11/24/2021	5	130	
4	Paving	Paving	11/25/2021	12/15/2021	5	15	
5	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Bakersfield Commercial Project - Kern-San Joaquin County, Summer

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	2	7.00	231	0.29
Building Construction	Forklifts	7	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	7	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	3	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Architectural Coating	Air Compressors	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	345.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0733	0.0388	0.4999	1.5700e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		156.2960	156.2960	3.7800e-003		156.3906
Total	**0.0733**	**0.0388**	**0.4999**	**1.5700e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**156.2960**	**156.2960**	**3.7800e-003**		**156.3906**

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	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.1298**	**2.0445**	**10.1743**	**4.4688**	**1.8809**	**6.3497**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0733	0.0388	0.4999	1.5700e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		156.2960	156.2960	3.7800e-003		156.3906
Total	**0.0733**	**0.0388**	**0.4999**	**1.5700e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**156.2960**	**156.2960**	**3.7800e-003**		**156.3906**

3.3 Grading - 2021

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0814	0.0431	0.5555	1.7400e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		173.6622	173.6622	4.2000e-003		173.7673
Total	**0.0814**	**0.0431**	**0.5555**	**1.7400e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**173.6622**	**173.6622**	**4.2000e-003**		**173.7673**

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	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0814	0.0431	0.5555	1.7400e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		173.6622	173.6622	4.2000e-003		173.7673
Total	**0.0814**	**0.0431**	**0.5555**	**1.7400e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**173.6622**	**173.6622**	**4.2000e-003**		**173.7673**

3.4 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695		5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**		**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4356	14.6941	2.5811	0.0393	0.9154	0.0391	0.9545	0.2636	0.0374	0.3010		4,117.1556	4,117.1556	0.2941		4,124.5087
Worker	1.4043	0.7430	9.5821	0.0301	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,995.6733	2,995.6733	0.0725		2,997.4864
Total	**1.8399**	**15.4370**	**12.1631**	**0.0694**	**3.7494**	**0.0582**	**3.8076**	**1.0153**	**0.0550**	**1.0703**		**7,112.8288**	**7,112.8288**	**0.3667**		**7,121.9951**

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695	0.0000	5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**	**0.0000**	**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4356	14.6941	2.5811	0.0393	0.9154	0.0391	0.9545	0.2636	0.0374	0.3010		4,117.1556	4,117.1556	0.2941		4,124.5087
Worker	1.4043	0.7430	9.5821	0.0301	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,995.6733	2,995.6733	0.0725		2,997.4864
Total	**1.8399**	**15.4370**	**12.1631**	**0.0694**	**3.7494**	**0.0582**	**3.8076**	**1.0153**	**0.0550**	**1.0703**		**7,112.8288**	**7,112.8288**	**0.3667**		**7,121.9951**

3.5 Paving - 2021

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353		3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**		**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0611	0.0323	0.4166	1.3100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		130.2467	130.2467	3.1500e-003		130.3255
Total	**0.0611**	**0.0323**	**0.4166**	**1.3100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**130.2467**	**130.2467**	**3.1500e-003**		**130.3255**

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353	0.0000	3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**	**0.0000**	**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0611	0.0323	0.4166	1.3100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		130.2467	130.2467	3.1500e-003		130.3255
Total	**0.0611**	**0.0323**	**0.4166**	**1.3100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**130.2467**	**130.2467**	**3.1500e-003**		**130.3255**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	48.8318					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882		562.8961	562.8961	0.0386		563.8618
Total	**49.2696**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**		**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2809	0.1486	1.9164	6.0100e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		599.1347	599.1347	0.0145		599.4973
Total	**0.2809**	**0.1486**	**1.9164**	**6.0100e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**599.1347**	**599.1347**	**0.0145**		**599.4973**

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	lb/day										lb/day					
Archit. Coating	48.8318					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882	0.0000	562.8961	562.8961	0.0386		563.8618
Total	**49.2696**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**	**0.0000**	**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2809	0.1486	1.9164	6.0100e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		599.1347	599.1347	0.0145		599.4973
Total	**0.2809**	**0.1486**	**1.9164**	**6.0100e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**599.1347**	**599.1347**	**0.0145**		**599.4973**

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	lb/day										lb/day					
Mitigated	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959
Unmitigated	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
NaturalGas Unmitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860

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	lb/day										lb/day					
Automobile Care Center	628.501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	327.332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2009.08	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Automobile Care Center	0.628501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	0.327332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2.00908	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

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	lb/day										lb/day					
Mitigated	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Unmitigated	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133

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	lb/day										lb/day					
Architectural Coating	0.1338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**0.9665**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.1338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**0.9665**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

CalEEMod Output

Operations - Passenger Vehicles Default Trip Length (Summer Daily)

Bakersfield Commercial Passenger Vehicles

Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	24.00	Pump	0.08	3,388.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors 2020

Land Use -

Construction Phase - Operations only run

Vehicle Trips - Passenger vehicles regular trips

Fleet Mix - Passenger Vehicles only

Bakersfield Commercial Passenger Vehicles - Kern-San Joaquin County, Summer

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	ST_TR	204.47	22.56
tblVehicleTrips	SU_TR	166.88	22.56
tblVehicleTrips	WD_TR	542.60	22.56

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	9.6409	1.5268	1.8176	2.9700e-003	0.0000	0.0941	0.0941	0.0000	0.0941	0.0941	0.0000	281.4481	281.4481	0.0193	0.0000	281.9309
Maximum	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**	**0.0000**	**281.9309**

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	lb/day										lb/day					
2021	9.6409	1.5268	1.8176	2.9700e-003	0.0000	0.0941	0.0941	0.0000	0.0941	0.0941	0.0000	281.4481	281.4481	0.0193	0.0000	281.9309
Maximum	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**	**0.0000**	**281.9309**

	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**

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	lb/day										lb/day					
Area	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Energy	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Mobile	0.7774	0.2592	3.3182	7.2600e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		722.0648	722.0648	0.0248		722.6856
Total	**0.8641**	**0.2690**	**3.3288**	**7.3200e-003**	**0.6060**	**6.8200e-003**	**0.6128**	**0.1606**	**6.3400e-003**	**0.1670**		**733.7554**	**733.7554**	**0.0251**	**2.1000e-004**	**734.4460**

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	lb/day										lb/day					
Area	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Energy	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Mobile	0.7774	0.2592	3.3182	7.2600e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		722.0648	722.0648	0.0248		722.6856
Total	**0.8641**	**0.2690**	**3.3288**	**7.3200e-003**	**0.6060**	**6.8200e-003**	**0.6128**	**0.1606**	**6.3400e-003**	**0.1670**		**733.7554**	**733.7554**	**0.0251**	**2.1000e-004**	**734.4460**

	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	Architectural Coating	Architectural Coating	9/14/2021	9/20/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 5,082; Non-Residential Outdoor: 1,694; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	9.4220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	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	**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**

3.2 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	9.4220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	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	**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**

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	lb/day										lb/day					
Mitigated	0.7774	0.2592	3.3182	7.2600e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		722.0648	722.0648	0.0248		722.6856
Unmitigated	0.7774	0.2592	3.3182	7.2600e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		722.0648	722.0648	0.0248		722.6856

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	541.44	541.44	541.44	290,431	290,431
Total	541.44	541.44	541.44	290,431	290,431

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
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
NaturalGas Unmitigated	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548

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	lb/day										lb/day					
Convenience Market With Gas Pumps	99.3253	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Total		**1.0700e-003**	**9.7400e-003**	**8.1800e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**		**11.6853**	**11.6853**	**2.2000e-004**	**2.1000e-004**	**11.7548**

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	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0993253	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Total		**1.0700e-003**	**9.7400e-003**	**8.1800e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**		**11.6853**	**11.6853**	**2.2000e-004**	**2.1000e-004**	**11.7548**

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	lb/day										lb/day					
Mitigated	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Unmitigated	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003

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	lb/day										lb/day					
Architectural Coating	0.0129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Total	**0.0857**	**2.0000e-005**	**2.4500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**5.2500e-003**	**5.2500e-003**	**1.0000e-005**		**5.6000e-003**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.0129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Total	**0.0857**	**2.0000e-005**	**2.4500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**5.2500e-003**	**5.2500e-003**	**1.0000e-005**		**5.6000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

CalEEMod Output

Operations - Passenger Vehicles Diverted Link Trips (Summer Daily)

Bakersfield Commercial Project

Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project - Kern-San Joaquin County, Summer

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Off-road Equipment - Adjusted equipment number to conserve default hours with shorter schedule

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	130.00
tblConstructionPhase	NumDays	20.00	15.00
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00

tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46

tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	69.7563	53.1392	48.4591	0.1275	18.2141	2.1569	20.2596	9.9699	2.0245	11.8517	0.0000	12,630.8750	12,630.8750	1.9470	0.0000	12,674.1677
Maximum	**69.7563**	**53.1392**	**48.4591**	**0.1275**	**18.2141**	**2.1569**	**20.2596**	**9.9699**	**2.0245**	**11.8517**	**0.0000**	**12,630.8750**	**12,630.8750**	**1.9470**	**0.0000**	**12,674.1677**

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	lb/day										lb/day					
2021	69.7563	53.1392	48.4591	0.1275	8.2777	2.1569	10.3231	4.5080	2.0245	6.3899	0.0000	12,630.8750	12,630.8750	1.9470	0.0000	12,674.1677
Maximum	**69.7563**	**53.1392**	**48.4591**	**0.1275**	**8.2777**	**2.1569**	**10.3231**	**4.5080**	**2.0245**	**6.3899**	**0.0000**	**12,630.8750**	**12,630.8750**	**1.9470**	**0.0000**	**12,674.1677**

	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**	**54.55**	**0.00**	**49.05**	**54.78**	**0.00**	**46.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959
Total	**6.4323**	**1.4106**	**14.1753**	**0.0166**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,814.3322**	**1,814.3322**	**0.0903**	**6.3900e-003**	**1,818.4952**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959
Total	**6.4323**	**1.4106**	**14.1753**	**0.0166**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,814.3322**	**1,814.3322**	**0.0903**	**6.3900e-003**	**1,818.4952**

	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	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	5/26/2021	5	30	
3	Building Construction	Building Construction	5/27/2021	11/24/2021	5	130	
4	Paving	Paving	11/25/2021	12/15/2021	5	15	
5	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Bakersfield Commercial Project - Kern-San Joaquin County, Summer

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	2	7.00	231	0.29
Building Construction	Forklifts	7	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	7	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	3	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Architectural Coating	Air Compressors	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	345.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0733	0.0388	0.4999	1.5700e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		156.2960	156.2960	3.7800e-003		156.3906
Total	**0.0733**	**0.0388**	**0.4999**	**1.5700e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**156.2960**	**156.2960**	**3.7800e-003**		**156.3906**

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	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.1298**	**2.0445**	**10.1743**	**4.4688**	**1.8809**	**6.3497**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0733	0.0388	0.4999	1.5700e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		156.2960	156.2960	3.7800e-003		156.3906
Total	**0.0733**	**0.0388**	**0.4999**	**1.5700e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**156.2960**	**156.2960**	**3.7800e-003**		**156.3906**

3.3 Grading - 2021

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0814	0.0431	0.5555	1.7400e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		173.6622	173.6622	4.2000e-003		173.7673
Total	**0.0814**	**0.0431**	**0.5555**	**1.7400e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**173.6622**	**173.6622**	**4.2000e-003**		**173.7673**

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	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0814	0.0431	0.5555	1.7400e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		173.6622	173.6622	4.2000e-003		173.7673
Total	**0.0814**	**0.0431**	**0.5555**	**1.7400e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**173.6622**	**173.6622**	**4.2000e-003**		**173.7673**

3.4 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695		5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**		**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4356	14.6941	2.5811	0.0393	0.9154	0.0391	0.9545	0.2636	0.0374	0.3010		4,117.1556	4,117.1556	0.2941		4,124.5087
Worker	1.4043	0.7430	9.5821	0.0301	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,995.6733	2,995.6733	0.0725		2,997.4864
Total	**1.8399**	**15.4370**	**12.1631**	**0.0694**	**3.7494**	**0.0582**	**3.8076**	**1.0153**	**0.0550**	**1.0703**		**7,112.8288**	**7,112.8288**	**0.3667**		**7,121.9951**

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695	0.0000	5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**	**0.0000**	**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4356	14.6941	2.5811	0.0393	0.9154	0.0391	0.9545	0.2636	0.0374	0.3010		4,117.1556	4,117.1556	0.2941		4,124.5087
Worker	1.4043	0.7430	9.5821	0.0301	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,995.6733	2,995.6733	0.0725		2,997.4864
Total	**1.8399**	**15.4370**	**12.1631**	**0.0694**	**3.7494**	**0.0582**	**3.8076**	**1.0153**	**0.0550**	**1.0703**		**7,112.8288**	**7,112.8288**	**0.3667**		**7,121.9951**

3.5 Paving - 2021

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353		3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**		**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0611	0.0323	0.4166	1.3100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		130.2467	130.2467	3.1500e-003		130.3255
Total	**0.0611**	**0.0323**	**0.4166**	**1.3100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**130.2467**	**130.2467**	**3.1500e-003**		**130.3255**

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353	0.0000	3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**	**0.0000**	**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0611	0.0323	0.4166	1.3100e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		130.2467	130.2467	3.1500e-003		130.3255
Total	**0.0611**	**0.0323**	**0.4166**	**1.3100e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**130.2467**	**130.2467**	**3.1500e-003**		**130.3255**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	69.0376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882		562.8961	562.8961	0.0386		563.8618
Total	**69.4754**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**		**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2809	0.1486	1.9164	6.0100e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		599.1347	599.1347	0.0145		599.4973
Total	**0.2809**	**0.1486**	**1.9164**	**6.0100e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**599.1347**	**599.1347**	**0.0145**		**599.4973**

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	lb/day										lb/day					
Archit. Coating	69.0376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882	0.0000	562.8961	562.8961	0.0386		563.8618
Total	**69.4754**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**	**0.0000**	**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2809	0.1486	1.9164	6.0100e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		599.1347	599.1347	0.0145		599.4973
Total	**0.2809**	**0.1486**	**1.9164**	**6.0100e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**599.1347**	**599.1347**	**0.0145**		**599.4973**

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	lb/day										lb/day					
Mitigated	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959
Unmitigated	5.3785	1.1199	13.9254	0.0149	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,465.5065	1,465.5065	0.0836		1,467.5959

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
NaturalGas Unmitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860

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	lb/day										lb/day					
Automobile Care Center	628.501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	327.332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2009.08	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Automobile Care Center	0.628501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	0.327332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2.00908	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

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	lb/day										lb/day					
Mitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Unmitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

CalEEMod Output

Operations - Truck Only (Summer Daily)

Bakersfield Commercial Project Truck Only

Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project Truck Only - Kern-San Joaquin County, Summer

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Truck only run

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Vehicle Trips - Traffic Study Trip Generation Rate

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Truck Only Run

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	1.00
tblFleetMix	HHD	0.15	0.67
tblFleetMix	LDA	0.48	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.02	0.26
tblFleetMix	LHD2	5.9280e-003	0.05
tblFleetMix	MCY	5.8390e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.1600e-004	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00

tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CC_TL	7.30	0.51
tblVehicleTrips	CNW_TL	7.30	0.51
tblVehicleTrips	CW_TL	9.50	0.51
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	25.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	25.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	25.00
tblVehicleTrips	WD_TR	716.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	690.8761	1.6754	3.7340	8.9800e-003	0.5668	0.0979	0.6647	0.1504	0.0976	0.2480	0.0000	880.5827	880.5827	0.0338	0.0000	881.4282
Maximum	**690.8761**	**1.6754**	**3.7340**	**8.9800e-003**	**0.5668**	**0.0979**	**0.6647**	**0.1504**	**0.0976**	**0.2480**	**0.0000**	**880.5827**	**880.5827**	**0.0338**	**0.0000**	**881.4282**

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	lb/day										lb/day					
2021	690.8761	1.6754	3.7340	8.9800e-003	0.5668	0.0979	0.6647	0.1504	0.0976	0.2480	0.0000	880.5827	880.5827	0.0338	0.0000	881.4282
Maximum	**690.8761**	**1.6754**	**3.7340**	**8.9800e-003**	**0.5668**	**0.0979**	**0.6647**	**0.1504**	**0.0976**	**0.2480**	**0.0000**	**880.5827**	**880.5827**	**0.0338**	**0.0000**	**881.4282**

	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**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	1.0768	43.1407	4.4555	0.0668	0.2668	0.0267	0.2935	0.0740	0.0255	0.0995		7,002.8966	7,002.8966	1.5376		7,041.3377
Total	**2.1307**	**43.4314**	**4.7055**	**0.0686**	**0.2668**	**0.0488**	**0.3156**	**0.0740**	**0.0476**	**0.1216**		**7,351.7223**	**7,351.7223**	**1.5444**	**6.3900e-003**	**7,392.2370**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	1.0768	43.1407	4.4555	0.0668	0.2668	0.0267	0.2935	0.0740	0.0255	0.0995		7,002.8966	7,002.8966	1.5376		7,041.3377
Total	**2.1307**	**43.4314**	**4.7055**	**0.0686**	**0.2668**	**0.0488**	**0.3156**	**0.0740**	**0.0476**	**0.1216**		**7,351.7223**	**7,351.7223**	**1.5444**	**6.3900e-003**	**7,392.2370**

	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	Architectural Coatings	Architectural Coating	10/3/2021	10/4/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coatings	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
Architectural Coatings	1	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coatings - 2021

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	lb/day										lb/day					
Archit. Coating	690.3763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**690.5952**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.2809	0.1486	1.9164	6.0100e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		599.1347	599.1347	0.0145		599.4973
Total	**0.2809**	**0.1486**	**1.9164**	**6.0100e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**599.1347**	**599.1347**	**0.0145**		**599.4973**

3.2 Architectural Coatings - 2021

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	lb/day										lb/day					
Archit. Coating	690.3763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**690.5952**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.2809	0.1486	1.9164	6.0100e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		599.1347	599.1347	0.0145		599.4973
Total	**0.2809**	**0.1486**	**1.9164**	**6.0100e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**599.1347**	**599.1347**	**0.0145**		**599.4973**

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	lb/day										lb/day					
Mitigated	1.0768	43.1407	4.4555	0.0668	0.2668	0.0267	0.2935	0.0740	0.0255	0.0995		7,002.8966	7,002.8966	1.5376		7,041.3377
Unmitigated	1.0768	43.1407	4.4555	0.0668	0.2668	0.0267	0.2935	0.0740	0.0255	0.0995		7,002.8966	7,002.8966	1.5376		7,041.3377

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	600.00	600.00	600.00	111,384	111,384
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	600.00	600.00	600.00	111,384	111,384

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.51	0.51	0.51	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.000000	0.000000	0.000000	0.000000	0.260000	0.050000	0.020000	0.670000	0.000000	0.000000	0.000000	0.000000	0.000000
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
NaturalGas Unmitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860

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	lb/day										lb/day					
Automobile Care Center	628.501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	327.332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2009.08	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Automobile Care Center	0.628501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	0.327332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2.00908	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

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	lb/day										lb/day					
Mitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Unmitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

CalEEMod Output

Construction and Operations Passenger Vehicles (Winter Daily)

Bakersfield Commercial Project

Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project - Kern-San Joaquin County, Winter

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Off-road Equipment - Adjusted equipment number to conserve default hours with shorter schedule

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Architectural Coating - Rule 4601 compliant coatings

Area Coating - Rule 4601 compliant coatings

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	65
tblAreaCoating	Area_EF_Nonresidential_Interior	150	65
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	130.00
tblConstructionPhase	NumDays	20.00	15.00
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00

tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00

tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	49.5304	53.3570	47.2346	0.1222	18.2141	2.1583	20.2596	9.9699	2.0258	11.8517	0.0000	12,099.7422	12,099.7422	1.9464	0.0000	12,143.7423
Maximum	**49.5304**	**53.3570**	**47.2346**	**0.1222**	**18.2141**	**2.1583**	**20.2596**	**9.9699**	**2.0258**	**11.8517**	**0.0000**	**12,099.7422**	**12,099.7422**	**1.9464**	**0.0000**	**12,143.7423**

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	lb/day										lb/day					
2021	49.5304	53.3570	47.2346	0.1222	8.2777	2.1583	10.3231	4.5080	2.0258	6.3899	0.0000	12,099.7422	12,099.7422	1.9464	0.0000	12,143.7423
Maximum	**49.5304**	**53.3570**	**47.2346**	**0.1222**	**8.2777**	**2.1583**	**10.3231**	**4.5080**	**2.0258**	**6.3899**	**0.0000**	**12,099.7422**	**12,099.7422**	**1.9464**	**0.0000**	**12,143.7423**

	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**	**54.55**	**0.00**	**49.05**	**54.78**	**0.00**	**46.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160
Total	**4.4643**	**1.5791**	**18.4768**	**0.0156**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,701.3163**	**1,701.3163**	**0.1117**	**6.3900e-003**	**1,706.0152**

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	lb/day										lb/day					
Area	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160
Total	**4.4643**	**1.5791**	**18.4768**	**0.0156**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,701.3163**	**1,701.3163**	**0.1117**	**6.3900e-003**	**1,706.0152**

	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	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	5/26/2021	5	30	
3	Building Construction	Building Construction	5/27/2021	11/24/2021	5	130	
4	Paving	Paving	11/25/2021	12/15/2021	5	15	
5	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Bakersfield Commercial Project - Kern-San Joaquin County, Winter

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	2	7.00	231	0.29
Building Construction	Forklifts	7	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	7	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	3	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Architectural Coating	Air Compressors	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	345.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0680	0.0444	0.4104	1.3600e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		135.9457	135.9457	3.2500e-003		136.0270
Total	**0.0680**	**0.0444**	**0.4104**	**1.3600e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**135.9457**	**135.9457**	**3.2500e-003**		**136.0270**

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	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.1298**	**2.0445**	**10.1743**	**4.4688**	**1.8809**	**6.3497**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0680	0.0444	0.4104	1.3600e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		135.9457	135.9457	3.2500e-003		136.0270
Total	**0.0680**	**0.0444**	**0.4104**	**1.3600e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**135.9457**	**135.9457**	**3.2500e-003**		**136.0270**

3.3 Grading - 2021

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0756	0.0493	0.4559	1.5200e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		151.0508	151.0508	3.6100e-003		151.1411
Total	**0.0756**	**0.0493**	**0.4559**	**1.5200e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**151.0508**	**151.0508**	**3.6100e-003**		**151.1411**

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	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0756	0.0493	0.4559	1.5200e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		151.0508	151.0508	3.6100e-003		151.1411
Total	**0.0756**	**0.0493**	**0.4559**	**1.5200e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**151.0508**	**151.0508**	**3.6100e-003**		**151.1411**

3.4 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695		5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**		**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4593	14.8047	3.0736	0.0380	0.9154	0.0405	0.9559	0.2636	0.0388	0.3023		3,976.0697	3,976.0697	0.3326		3,984.3856
Worker	1.3038	0.8502	7.8650	0.0261	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,605.6263	2,605.6263	0.0623		2,607.1841
Total	**1.7632**	**15.6549**	**10.9386**	**0.0641**	**3.7494**	**0.0596**	**3.8090**	**1.0153**	**0.0563**	**1.0716**		**6,581.6960**	**6,581.6960**	**0.3949**		**6,591.5697**

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695	0.0000	5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**	**0.0000**	**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4593	14.8047	3.0736	0.0380	0.9154	0.0405	0.9559	0.2636	0.0388	0.3023		3,976.0697	3,976.0697	0.3326		3,984.3856
Worker	1.3038	0.8502	7.8650	0.0261	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,605.6263	2,605.6263	0.0623		2,607.1841
Total	**1.7632**	**15.6549**	**10.9386**	**0.0641**	**3.7494**	**0.0596**	**3.8090**	**1.0153**	**0.0563**	**1.0716**		**6,581.6960**	**6,581.6960**	**0.3949**		**6,591.5697**

3.5 Paving - 2021

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353		3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**		**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0567	0.0370	0.3420	1.1400e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		113.2881	113.2881	2.7100e-003		113.3558
Total	**0.0567**	**0.0370**	**0.3420**	**1.1400e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**113.2881**	**113.2881**	**2.7100e-003**		**113.3558**

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353	0.0000	3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**	**0.0000**	**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0567	0.0370	0.3420	1.1400e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		113.2881	113.2881	2.7100e-003		113.3558
Total	**0.0567**	**0.0370**	**0.3420**	**1.1400e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**113.2881**	**113.2881**	**2.7100e-003**		**113.3558**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	48.8318					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882		562.8961	562.8961	0.0386		563.8618
Total	**49.2696**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**		**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2608	0.1700	1.5730	5.2300e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		521.1253	521.1253	0.0125		521.4368
Total	**0.2608**	**0.1700**	**1.5730**	**5.2300e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**521.1253**	**521.1253**	**0.0125**		**521.4368**

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	lb/day										lb/day					
Archit. Coating	48.8318					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882	0.0000	562.8961	562.8961	0.0386		563.8618
Total	**49.2696**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**	**0.0000**	**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2608	0.1700	1.5730	5.2300e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		521.1253	521.1253	0.0125		521.4368
Total	**0.2608**	**0.1700**	**1.5730**	**5.2300e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**521.1253**	**521.1253**	**0.0125**		**521.4368**

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	lb/day										lb/day					
Mitigated	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160
Unmitigated	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
NaturalGas Unmitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860

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	lb/day										lb/day					
Automobile Care Center	628.501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	327.332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2009.08	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Automobile Care Center	0.628501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	0.327332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2.00908	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

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	lb/day										lb/day					
Mitigated	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Unmitigated	0.9665	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133

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	lb/day										lb/day					
Architectural Coating	0.1338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**0.9665**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.1338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**0.9665**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

CalEEMod Output

Operations - Passenger Vehicles Default Trip Length (Winter Daily)

Bakersfield Commercial Passenger Vehicles

Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	24.00	Pump	0.08	3,388.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors 2020

Land Use -

Construction Phase - Operations only run

Vehicle Trips - Passenger vehicles regular trips

Fleet Mix - Passenger Vehicles only

Bakersfield Commercial Passenger Vehicles - Kern-San Joaquin County, Winter

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	ST_TR	204.47	22.56
tblVehicleTrips	SU_TR	166.88	22.56
tblVehicleTrips	WD_TR	542.60	22.56

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	9.6409	1.5268	1.8176	2.9700e-003	0.0000	0.0941	0.0941	0.0000	0.0941	0.0941	0.0000	281.4481	281.4481	0.0193	0.0000	281.9309
Maximum	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**	**0.0000**	**281.9309**

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	lb/day										lb/day					
2021	9.6409	1.5268	1.8176	2.9700e-003	0.0000	0.0941	0.0941	0.0000	0.0941	0.0941	0.0000	281.4481	281.4481	0.0193	0.0000	281.9309
Maximum	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**	**0.0000**	**281.9309**

	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**

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	lb/day										lb/day					
Area	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Energy	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Mobile	0.5132	0.2975	3.5735	6.4300e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		637.9615	637.9615	0.0261		638.6140
Total	**0.5999**	**0.3072**	**3.5841**	**6.4900e-003**	**0.6060**	**6.8200e-003**	**0.6128**	**0.1606**	**6.3400e-003**	**0.1670**		**649.6521**	**649.6521**	**0.0263**	**2.1000e-004**	**650.3744**

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	lb/day										lb/day					
Area	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Energy	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Mobile	0.5132	0.2975	3.5735	6.4300e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		637.9615	637.9615	0.0261		638.6140
Total	**0.5999**	**0.3072**	**3.5841**	**6.4900e-003**	**0.6060**	**6.8200e-003**	**0.6128**	**0.1606**	**6.3400e-003**	**0.1670**		**649.6521**	**649.6521**	**0.0263**	**2.1000e-004**	**650.3744**

	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	Architectural Coating	Architectural Coating	9/14/2021	9/20/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 5,082; Non-Residential Outdoor: 1,694; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	9.4220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	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	**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**

3.2 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	9.4220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**9.6409**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	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	**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**

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	lb/day										lb/day					
Mitigated	0.5132	0.2975	3.5735	6.4300e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		637.9615	637.9615	0.0261		638.6140
Unmitigated	0.5132	0.2975	3.5735	6.4300e-003	0.6060	6.0700e-003	0.6121	0.1606	5.5900e-003	0.1662		637.9615	637.9615	0.0261		638.6140

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	541.44	541.44	541.44	290,431	290,431
Total	541.44	541.44	541.44	290,431	290,431

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
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
NaturalGas Unmitigated	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548

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	lb/day										lb/day					
Convenience Market With Gas Pumps	99.3253	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Total		**1.0700e-003**	**9.7400e-003**	**8.1800e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**		**11.6853**	**11.6853**	**2.2000e-004**	**2.1000e-004**	**11.7548**

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	lb/day										lb/day					
Convenience Market With Gas Pumps	0.0993253	1.0700e-003	9.7400e-003	8.1800e-003	6.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004		11.6853	11.6853	2.2000e-004	2.1000e-004	11.7548
Total		**1.0700e-003**	**9.7400e-003**	**8.1800e-003**	**6.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**		**11.6853**	**11.6853**	**2.2000e-004**	**2.1000e-004**	**11.7548**

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	lb/day										lb/day					
Mitigated	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Unmitigated	0.0856	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003

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	lb/day										lb/day					
Architectural Coating	0.0129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Total	**0.0857**	**2.0000e-005**	**2.4500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**5.2500e-003**	**5.2500e-003**	**1.0000e-005**		**5.6000e-003**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.0129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0725					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		5.2500e-003	5.2500e-003	1.0000e-005		5.6000e-003
Total	**0.0857**	**2.0000e-005**	**2.4500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**5.2500e-003**	**5.2500e-003**	**1.0000e-005**		**5.6000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

CalEEMod Output

Operations - Passenger Vehicle Diverted Link Trip Length (Winter Daily)

Bakersfield Commercial Project

Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project - Kern-San Joaquin County, Winter

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Off-road Equipment - Adjusted equipment number to conserve default hours with shorter schedule

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	300.00	130.00
tblConstructionPhase	NumDays	20.00	15.00
tblFleetMix	HHD	0.15	0.00
tblFleetMix	LDA	0.48	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.17	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.9280e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00

tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46

tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	69.7362	53.3570	47.2346	0.1222	18.2141	2.1583	20.2596	9.9699	2.0258	11.8517	0.0000	12,099.7422	12,099.7422	1.9464	0.0000	12,143.7423
Maximum	**69.7362**	**53.3570**	**47.2346**	**0.1222**	**18.2141**	**2.1583**	**20.2596**	**9.9699**	**2.0258**	**11.8517**	**0.0000**	**12,099.7422**	**12,099.7422**	**1.9464**	**0.0000**	**12,143.7423**

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	lb/day										lb/day					
2021	69.7362	53.3570	47.2346	0.1222	8.2777	2.1583	10.3231	4.5080	2.0258	6.3899	0.0000	12,099.7422	12,099.7422	1.9464	0.0000	12,143.7423
Maximum	**69.7362**	**53.3570**	**47.2346**	**0.1222**	**8.2777**	**2.1583**	**10.3231**	**4.5080**	**2.0258**	**6.3899**	**0.0000**	**12,099.7422**	**12,099.7422**	**1.9464**	**0.0000**	**12,143.7423**

	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**	**54.55**	**0.00**	**49.05**	**54.78**	**0.00**	**46.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160
Total	**4.5197**	**1.5791**	**18.4768**	**0.0156**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,701.3163**	**1,701.3163**	**0.1117**	**6.3900e-003**	**1,706.0152**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160
Total	**4.5197**	**1.5791**	**18.4768**	**0.0156**	**0.8143**	**0.0472**	**0.8615**	**0.2159**	**0.0452**	**0.2610**		**1,701.3163**	**1,701.3163**	**0.1117**	**6.3900e-003**	**1,706.0152**

	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	4/1/2021	4/14/2021	5	10	
2	Grading	Grading	4/15/2021	5/26/2021	5	30	
3	Building Construction	Building Construction	5/27/2021	11/24/2021	5	130	
4	Paving	Paving	11/25/2021	12/15/2021	5	15	
5	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Bakersfield Commercial Project - Kern-San Joaquin County, Winter

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	2	7.00	231	0.29
Building Construction	Forklifts	7	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	7	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	3	8.00	130	0.42
Paving	Paving Equipment	3	8.00	132	0.36
Paving	Rollers	3	8.00	80	0.38
Architectural Coating	Air Compressors	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	345.00	135.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	9	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

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	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0680	0.0444	0.4104	1.3600e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		135.9457	135.9457	3.2500e-003		136.0270
Total	**0.0680**	**0.0444**	**0.4104**	**1.3600e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**135.9457**	**135.9457**	**3.2500e-003**		**136.0270**

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	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.1298**	**2.0445**	**10.1743**	**4.4688**	**1.8809**	**6.3497**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

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	lb/day										lb/day					
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
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
Worker	0.0680	0.0444	0.4104	1.3600e-003	0.1479	9.9000e-004	0.1489	0.0392	9.2000e-004	0.0401		135.9457	135.9457	3.2500e-003		136.0270
Total	**0.0680**	**0.0444**	**0.4104**	**1.3600e-003**	**0.1479**	**9.9000e-004**	**0.1489**	**0.0392**	**9.2000e-004**	**0.0401**		**135.9457**	**135.9457**	**3.2500e-003**		**136.0270**

3.3 Grading - 2021

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	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0756	0.0493	0.4559	1.5200e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		151.0508	151.0508	3.6100e-003		151.1411
Total	**0.0756**	**0.0493**	**0.4559**	**1.5200e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**151.0508**	**151.0508**	**3.6100e-003**		**151.1411**

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	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**3.9030**	**1.9853**	**5.8883**	**1.6184**	**1.8265**	**3.4449**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

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	lb/day										lb/day					
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
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
Worker	0.0756	0.0493	0.4559	1.5200e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		151.0508	151.0508	3.6100e-003		151.1411
Total	**0.0756**	**0.0493**	**0.4559**	**1.5200e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**151.0508**	**151.0508**	**3.6100e-003**		**151.1411**

3.4 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695		5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**		**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4593	14.8047	3.0736	0.0380	0.9154	0.0405	0.9559	0.2636	0.0388	0.3023		3,976.0697	3,976.0697	0.3326		3,984.3856
Worker	1.3038	0.8502	7.8650	0.0261	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,605.6263	2,605.6263	0.0623		2,607.1841
Total	**1.7632**	**15.6549**	**10.9386**	**0.0641**	**3.7494**	**0.0596**	**3.8090**	**1.0153**	**0.0563**	**1.0716**		**6,581.6960**	**6,581.6960**	**0.3949**		**6,591.5697**

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	lb/day										lb/day					
Off-Road	4.0950	37.7022	36.2960	0.0581		2.0987	2.0987		1.9695	1.9695	0.0000	5,518.0462	5,518.0462	1.3651		5,552.1726
Total	**4.0950**	**37.7022**	**36.2960**	**0.0581**		**2.0987**	**2.0987**		**1.9695**	**1.9695**	**0.0000**	**5,518.0462**	**5,518.0462**	**1.3651**		**5,552.1726**

3.4 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.4593	14.8047	3.0736	0.0380	0.9154	0.0405	0.9559	0.2636	0.0388	0.3023		3,976.0697	3,976.0697	0.3326		3,984.3856
Worker	1.3038	0.8502	7.8650	0.0261	2.8341	0.0191	2.8532	0.7517	0.0176	0.7693		2,605.6263	2,605.6263	0.0623		2,607.1841
Total	**1.7632**	**15.6549**	**10.9386**	**0.0641**	**3.7494**	**0.0596**	**3.8090**	**1.0153**	**0.0563**	**1.0716**		**6,581.6960**	**6,581.6960**	**0.3949**		**6,591.5697**

3.5 Paving - 2021

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353		3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**		**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0567	0.0370	0.3420	1.1400e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		113.2881	113.2881	2.7100e-003		113.3558
Total	**0.0567**	**0.0370**	**0.3420**	**1.1400e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**113.2881**	**113.2881**	**2.7100e-003**		**113.3558**

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	lb/day										lb/day					
Off-Road	1.8833	19.3786	21.9799	0.0342		1.0166	1.0166		0.9353	0.9353	0.0000	3,310.8163	3,310.8163	1.0708		3,337.5859
Paving	2.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.6064**	**19.3786**	**21.9799**	**0.0342**		**1.0166**	**1.0166**		**0.9353**	**0.9353**	**0.0000**	**3,310.8163**	**3,310.8163**	**1.0708**		**3,337.5859**

3.5 Paving - 2021

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	lb/day										lb/day					
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
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
Worker	0.0567	0.0370	0.3420	1.1400e-003	0.1232	8.3000e-004	0.1241	0.0327	7.6000e-004	0.0335		113.2881	113.2881	2.7100e-003		113.3558
Total	**0.0567**	**0.0370**	**0.3420**	**1.1400e-003**	**0.1232**	**8.3000e-004**	**0.1241**	**0.0327**	**7.6000e-004**	**0.0335**		**113.2881**	**113.2881**	**2.7100e-003**		**113.3558**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	69.0376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882		562.8961	562.8961	0.0386		563.8618
Total	**69.4754**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**		**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2608	0.1700	1.5730	5.2300e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		521.1253	521.1253	0.0125		521.4368
Total	**0.2608**	**0.1700**	**1.5730**	**5.2300e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**521.1253**	**521.1253**	**0.0125**		**521.4368**

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	lb/day										lb/day					
Archit. Coating	69.0376					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4378	3.0537	3.6351	5.9400e-003		0.1882	0.1882		0.1882	0.1882	0.0000	562.8961	562.8961	0.0386		563.8618
Total	**69.4754**	**3.0537**	**3.6351**	**5.9400e-003**		**0.1882**	**0.1882**		**0.1882**	**0.1882**	**0.0000**	**562.8961**	**562.8961**	**0.0386**		**563.8618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.2608	0.1700	1.5730	5.2300e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		521.1253	521.1253	0.0125		521.4368
Total	**0.2608**	**0.1700**	**1.5730**	**5.2300e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**521.1253**	**521.1253**	**0.0125**		**521.4368**

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	lb/day										lb/day					
Mitigated	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160
Unmitigated	3.4658	1.2884	18.2268	0.0138	0.8143	0.0251	0.8394	0.2159	0.0231	0.2389		1,352.4906	1,352.4906	0.1050		1,355.1160

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
NaturalGas Unmitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860

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	lb/day										lb/day					
Automobile Care Center	628.501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	327.332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2009.08	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Automobile Care Center	0.628501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	0.327332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2.00908	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

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	lb/day										lb/day					
Mitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Unmitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

CalEEMod Output

Operations - Truck Only (Winter Daily)

Bakersfield Commercial Project Truck Only

Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project Truck Only - Kern-San Joaquin County, Winter

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Truck only run

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Vehicle Trips - Traffic Study Trip Generation Rate

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Truck Only Run

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	1.00
tblFleetMix	HHD	0.15	0.67
tblFleetMix	LDA	0.48	0.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.02	0.26
tblFleetMix	LHD2	5.9280e-003	0.05
tblFleetMix	MCY	5.8390e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.1600e-004	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.6200e-003	0.00
tblFleetMix	SBUS	9.3100e-004	0.00
tblFleetMix	UBUS	1.6640e-003	0.00
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00

tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CC_TL	7.30	0.51
tblVehicleTrips	CNW_TL	7.30	0.51
tblVehicleTrips	CW_TL	9.50	0.51
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	25.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	25.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	25.00
tblVehicleTrips	WD_TR	716.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	690.8560	1.6969	3.3906	8.2000e-003	0.5668	0.0979	0.6647	0.1504	0.0976	0.2480	0.0000	802.5733	802.5733	0.0318	0.0000	803.3677
Maximum	**690.8560**	**1.6969**	**3.3906**	**8.2000e-003**	**0.5668**	**0.0979**	**0.6647**	**0.1504**	**0.0976**	**0.2480**	**0.0000**	**802.5733**	**802.5733**	**0.0318**	**0.0000**	**803.3677**

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	lb/day										lb/day					
2021	690.8560	1.6969	3.3906	8.2000e-003	0.5668	0.0979	0.6647	0.1504	0.0976	0.2480	0.0000	802.5733	802.5733	0.0318	0.0000	803.3677
Maximum	**690.8560**	**1.6969**	**3.3906**	**8.2000e-003**	**0.5668**	**0.0979**	**0.6647**	**0.1504**	**0.0976**	**0.2480**	**0.0000**	**802.5733**	**802.5733**	**0.0318**	**0.0000**	**803.3677**

	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**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	1.1926	41.6346	6.5789	0.0591	0.2668	0.0326	0.2994	0.0740	0.0312	0.1052		6,185.2776	6,185.2776	1.7559		6,229.1761
Total	**2.2464**	**41.9254**	**6.8289**	**0.0608**	**0.2668**	**0.0548**	**0.3215**	**0.0740**	**0.0533**	**0.1273**		**6,534.1033**	**6,534.1033**	**1.7627**	**6.3900e-003**	**6,580.0754**

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	lb/day										lb/day					
Area	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Energy	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
Mobile	1.1926	41.6346	6.5789	0.0591	0.2668	0.0326	0.2994	0.0740	0.0312	0.1052		6,185.2776	6,185.2776	1.7559		6,229.1761
Total	**2.2464**	**41.9254**	**6.8289**	**0.0608**	**0.2668**	**0.0548**	**0.3215**	**0.0740**	**0.0533**	**0.1273**		**6,534.1033**	**6,534.1033**	**1.7627**	**6.3900e-003**	**6,580.0754**

	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	Architectural Coatings	Architectural Coating	10/3/2021	10/4/2021	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coatings	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
Architectural Coatings	1	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coatings - 2021

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	lb/day										lb/day					
Archit. Coating	690.3763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**690.5952**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.2608	0.1700	1.5730	5.2300e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		521.1253	521.1253	0.0125		521.4368
Total	**0.2608**	**0.1700**	**1.5730**	**5.2300e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**521.1253**	**521.1253**	**0.0125**		**521.4368**

3.2 Architectural Coatings - 2021

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	lb/day										lb/day					
Archit. Coating	690.3763					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**690.5952**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	lb/day										lb/day					
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
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
Worker	0.2608	0.1700	1.5730	5.2300e-003	0.5668	3.8100e-003	0.5706	0.1504	3.5100e-003	0.1539		521.1253	521.1253	0.0125		521.4368
Total	**0.2608**	**0.1700**	**1.5730**	**5.2300e-003**	**0.5668**	**3.8100e-003**	**0.5706**	**0.1504**	**3.5100e-003**	**0.1539**		**521.1253**	**521.1253**	**0.0125**		**521.4368**

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	lb/day										lb/day					
Mitigated	1.1926	41.6346	6.5789	0.0591	0.2668	0.0326	0.2994	0.0740	0.0312	0.1052		6,185.2776	6,185.2776	1.7559		6,229.1761
Unmitigated	1.1926	41.6346	6.5789	0.0591	0.2668	0.0326	0.2994	0.0740	0.0312	0.1052		6,185.2776	6,185.2776	1.7559		6,229.1761

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	600.00	600.00	600.00	111,384	111,384
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	600.00	600.00	600.00	111,384	111,384

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.51	0.51	0.51	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.000000	0.000000	0.000000	0.000000	0.260000	0.050000	0.020000	0.670000	0.000000	0.000000	0.000000	0.000000	0.000000
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

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	lb/day										lb/day					
NaturalGas Mitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860
NaturalGas Unmitigated	0.0320	0.2907	0.2442	1.7400e-003		0.0221	0.0221		0.0221	0.0221		348.8132	348.8132	6.6900e-003	6.3900e-003	350.8860

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	lb/day										lb/day					
Automobile Care Center	628.501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	327.332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2009.08	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

5.2 Energy by Land Use - NaturalGas

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	lb/day										lb/day					
Automobile Care Center	0.628501	6.7800e-003	0.0616	0.0518	3.7000e-004		4.6800e-003	4.6800e-003		4.6800e-003	4.6800e-003		73.9414	73.9414	1.4200e-003	1.3600e-003	74.3808
Convenience Market With Gas Pumps	0.327332	3.5300e-003	0.0321	0.0270	1.9000e-004		2.4400e-003	2.4400e-003		2.4400e-003	2.4400e-003		38.5097	38.5097	7.4000e-004	7.1000e-004	38.7385
Fast Food Restaurant w/o Drive Thru	2.00908	0.0217	0.1970	0.1655	1.1800e-003		0.0150	0.0150		0.0150	0.0150		236.3622	236.3622	4.5300e-003	4.3300e-003	237.7668
Other Non-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
Parking Lot	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
Total		**0.0320**	**0.2907**	**0.2442**	**1.7400e-003**		**0.0221**	**0.0221**		**0.0221**	**0.0221**		**348.8132**	**348.8132**	**6.6900e-003**	**6.4000e-003**	**350.8860**

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	lb/day										lb/day					
Mitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Unmitigated	1.0219	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

6.2 Area by SubCategory

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	lb/day										lb/day					
Architectural Coating	0.1891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.4000e-004	5.0000e-005	5.8100e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0124	0.0124	3.0000e-005		0.0133
Total	**1.0219**	**5.0000e-005**	**5.8100e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0124**	**0.0124**	**3.0000e-005**		**0.0133**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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

CalEEMod Output

Operations - GHG Passenger Vehicles Default Trip Length BAU

Bakersfield Commercial Passenger Vehicles BAU

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	24.00	Pump	0.08	3,388.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors 2020

Land Use -

Construction Phase - Operations only run

Vehicle Trips - Passenger vehicles regular trips

Fleet Mix - Passenger Vehicles only

Bakersfield Commercial Passenger Vehicles BAU - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblFleetMix	HHD	0.14	0.00
tblFleetMix	LDA	0.39	0.60
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT2	0.15	0.21
tblFleetMix	LHD1	0.05	0.00
tblFleetMix	LHD2	8.7770e-003	0.00
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MDV	0.17	0.14
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.2660e-003	0.00
tblFleetMix	SBUS	9.5200e-004	0.00
tblFleetMix	UBUS	1.2200e-003	0.00
tblVehicleTrips	ST_TR	204.47	22.56
tblVehicleTrips	SU_TR	166.88	22.56
tblVehicleTrips	WD_TR	542.60	22.56

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					
2021											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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					
2021											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

	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**

Bakersfield Commercial Passenger Vehicles BAU - Kern-San Joaquin County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.8000e-004
Energy											0.0000	9.9678	9.9678	4.0000e-004	1.1000e-004	10.0108
Mobile											0.0000	142.7044	142.7044	0.0242	0.0000	143.3080
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0796	0.5517	0.6313	8.2000e-003	2.0000e-004	0.8955
Total											**0.0796**	**153.2243**	**153.3039**	**0.0328**	**3.1000e-004**	**154.2148**

2.2 Overall Operational

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											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.8000e-004
Energy											0.0000	9.9678	9.9678	4.0000e-004	1.1000e-004	10.0108
Mobile											0.0000	142.7044	142.7044	0.0242	0.0000	143.3080
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0796	0.5517	0.6313	8.2000e-003	2.0000e-004	0.8955
Total											**0.0796**	**153.2243**	**153.3039**	**0.0328**	**3.1000e-004**	**154.2148**

	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	Architectural Coating	Architectural Coating	9/14/2021	9/20/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 5,082; Non-Residential Outdoor: 1,694; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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											0.0000	142.7044	142.7044	0.0242	0.0000	143.3080
Unmitigated											0.0000	142.7044	142.7044	0.0242	0.0000	143.3080

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	541.44	541.44	541.44	290,431	290,431
Total	541.44	541.44	541.44	290,431	290,431

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
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816

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	8.0332	8.0332	3.6000e-004	8.0000e-005	8.0647
Electricity Unmitigated											0.0000	8.0332	8.0332	3.6000e-004	8.0000e-005	8.0647
NaturalGas Mitigated											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
NaturalGas Unmitigated											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461

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					
Convenience Market With Gas Pumps	36253.7											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
Total												**0.0000**	**1.9346**	**1.9346**	**4.0000e-005**	**4.0000e-005**	**1.9461**

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					
Convenience Market With Gas Pumps	36253.7											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
Total												**0.0000**	**1.9346**	**1.9346**	**4.0000e-005**	**4.0000e-005**	**1.9461**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	27613.8	8.0332	3.6000e-004	8.0000e-005	8.0647
Total		**8.0332**	**3.6000e-004**	**8.0000e-005**	**8.0647**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	27613.8	8.0332	3.6000e-004	8.0000e-005	8.0647
Total		**8.0332**	**3.6000e-004**	**8.0000e-005**	**8.0647**

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					
Mitigated											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.8000e-004
Unmitigated											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.8000e-004

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.8000e-004
Total											**0.0000**	**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.0000**	**4.8000e-004**

6.2 Area by SubCategory

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.8000e-004
Total											**0.0000**	**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.0000**	**4.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.6313	8.2000e-003	2.0000e-004	0.8955
Unmitigated	0.6313	8.2000e-003	2.0000e-004	0.8955

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.6313	8.2000e-003	2.0000e-004	0.8955
Total		**0.6313**	**8.2000e-003**	**2.0000e-004**	**0.8955**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.6313	8.2000e-003	2.0000e-004	0.8955
Total		**0.6313**	**8.2000e-003**	**2.0000e-004**	**0.8955**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

CalEEMod Output

Operations - GHG Passenger Vehicles Diverted Link Trips BAU

Bakersfield Comm Project Const and Pass Veh BAU

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Bakersfield Comm Project Const and Pass Veh BAU - Kern-San Joaquin County, Annual

Project Characteristics -

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Architectural Coating - Rule 4601 compliant coatings

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Area Coating - Rule 4601 compliant coatings

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	65
tblAreaCoating	Area_EF_Nonresidential_Interior	250	65
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.00
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDA	0.39	0.60

tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT1	0.06	0.04
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LDT2	0.15	0.21
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD1	0.05	0.00
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	LHD2	8.7770e-003	0.00
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003

tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MDV	0.17	0.12
tblFleetMix	MDV	0.17	0.14
tblFleetMix	MDV	0.17	0.12
tblFleetMix	MDV	0.17	0.12
tblFleetMix	MDV	0.17	0.12
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	OBUS	1.2660e-003	0.00
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	SBUS	9.5200e-004	0.00
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	UBUS	1.2200e-003	1.6640e-003

tblFleetMix	UBUS	1.2200e-003	0.00
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021											0.0000	3.7371	3.7371	1.5000e-004	0.0000	3.7408
Maximum											**0.0000**	**3.7371**	**3.7371**	**1.5000e-004**	**0.0000**	**3.7408**

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					
2021											0.0000	3.7371	3.7371	1.5000e-004	0.0000	3.7408
Maximum											**0.0000**	**3.7371**	**3.7371**	**1.5000e-004**	**0.0000**	**3.7408**

	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)
		Highest		

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Energy											0.0000	210.9433	210.9433	8.0300e-003	2.4900e-003	211.8868
Mobile											0.0000	294.6943	294.6943	0.1049	0.0000	297.3172
Waste											16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water											0.7428	4.5559	5.2986	0.0765	1.8400e-003	7.7605
Total											**17.4022**	**510.1945**	**527.5968**	**1.1740**	**4.3300e-003**	**558.2387**

2.2 Overall Operational

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Energy											0.0000	210.9433	210.9433	8.0300e-003	2.4900e-003	211.8868
Mobile											0.0000	294.6943	294.6943	0.1049	0.0000	297.3172
Waste											12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water											0.5942	3.6447	4.2389	0.0612	1.4800e-003	6.2084
Total											**13.0888**	**509.2834**	**522.3722**	**0.9126**	**3.9700e-003**	**546.3683**

	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**	**24.79**	**0.18**	**0.99**	**22.27**	**8.31**	**2.13**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coating - 2021

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total											**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total											**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

3.2 Architectural Coating - 2021

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total											**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total											**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

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											0.0000	294.6943	294.6943	0.1049	0.0000	297.3172
Unmitigated											0.0000	294.6943	294.6943	0.1049	0.0000	297.3172

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Bakersfield Comm Project Const and Pass Veh BAU - Kern-San Joaquin County, Annual

	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	153.1934	153.1934	6.9300e-003	1.4300e-003	153.7936
Electricity Unmitigated											0.0000	153.1934	153.1934	6.9300e-003	1.4300e-003	153.7936
NaturalGas Mitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	28.2037	1.2800e-003	2.6000e-004	28.3142
Convenience Market With Gas Pumps	91002.9	26.4738	1.2000e-003	2.5000e-004	26.5775
Fast Food Restaurant w/o Drive Thru	100960	29.3706	1.3300e-003	2.7000e-004	29.4856
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	69.1453	3.1300e-003	6.5000e-004	69.4163
Total		**153.1934**	**6.9400e-003**	**1.4300e-003**	**153.7936**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	28.2037	1.2800e-003	2.6000e-004	28.3142
Convenience Market With Gas Pumps	91002.9	26.4738	1.2000e-003	2.5000e-004	26.5775
Fast Food Restaurant w/o Drive Thru	100960	29.3706	1.3300e-003	2.7000e-004	29.4856
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	69.1453	3.1300e-003	6.5000e-004	69.4163
Total		**153.1934**	**6.9400e-003**	**1.4300e-003**	**153.7936**

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					
Mitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Unmitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.1300e-003**

6.2 Area by SubCategory

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.1300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2389	0.0612	1.4800e-003	6.2084
Unmitigated	5.2986	0.0765	1.8400e-003	7.7605

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	2.6008	0.0338	8.2000e-004	3.6891
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.6313	8.2000e-003	2.0000e-004	0.8955
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	2.0665	0.0345	8.3000e-004	3.1760
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.2986**	**0.0765**	**1.8500e-003**	**7.7605**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	2.0807	0.0270	6.5000e-004	2.9513
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.5050	6.5600e-003	1.6000e-004	0.7164
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	1.6532	0.0276	6.6000e-004	2.5408
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**4.2389**	**0.0612**	**1.4700e-003**	**6.2084**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

CalEEMod Output

Operations - GHG Truck Only BAU

Bakersfield Commercial Project Truck Only BAU

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project Truck Only BAU - Kern-San Joaquin County, Annual

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Truck only run

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Vehicle Trips - Traffic Study Trip Generation Rate

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Truck Only Run

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.67
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDA	0.39	0.00
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDA	0.39	0.48
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT1	0.06	0.00

tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT1	0.06	0.03
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LDT2	0.15	0.00
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LDT2	0.15	0.17
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD1	0.05	0.26
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD1	0.05	0.02
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	LHD2	8.7770e-003	0.05
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	LHD2	8.7770e-003	5.9280e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MCY	6.1030e-003	0.00
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MCY	6.1030e-003	5.8390e-003
tblFleetMix	MDV	0.17	0.12
tblFleetMix	MDV	0.17	0.00
tblFleetMix	MDV	0.17	0.12
tblFleetMix	MDV	0.17	0.12

tblFleetMix	MDV	0.17	0.12
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	0.00
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MH	2.3920e-003	8.1600e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	OBUS	1.2660e-003	0.00
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	OBUS	1.2660e-003	1.6200e-003
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	SBUS	9.5200e-004	0.00
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	SBUS	9.5200e-004	9.3100e-004
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblFleetMix	UBUS	1.2200e-003	0.00
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblFleetMix	UBUS	1.2200e-003	1.6640e-003
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00

tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblVehicleTrips	CC_TL	7.30	0.51
tblVehicleTrips	CNW_TL	7.30	0.51
tblVehicleTrips	CW_TL	9.50	0.51
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	25.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	25.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	25.00
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021											0.0000	0.3737	0.3737	1.0000e-005	0.0000	0.3741
Maximum											**0.0000**	**0.3737**	**0.3737**	**1.0000e-005**	**0.0000**	**0.3741**

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					
2021											0.0000	0.3737	0.3737	1.0000e-005	0.0000	0.3741
Maximum											**0.0000**	**0.3737**	**0.3737**	**1.0000e-005**	**0.0000**	**0.3741**

	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**

Bakersfield Commercial Project Truck Only BAU - Kern-San Joaquin County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Energy											0.0000	210.9433	210.9433	8.0300e-003	2.4900e-003	211.8868
Mobile											0.0000	1,070.3001	1,070.3001	1.7365	0.0000	1,113.7115
Waste											16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water											0.7428	4.5559	5.2986	0.0765	1.8400e-003	7.7605
Total											**17.4022**	**1,285.8003**	**1,303.2026**	**2.8055**	**4.3300e-003**	**1,374.6330**

2.2 Overall Operational

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Energy											0.0000	210.9433	210.9433	8.0300e-003	2.4900e-003	211.8868
Mobile											0.0000	1,070.3001	1,070.3001	1.7365	0.0000	1,113.7115
Waste											12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water											0.5942	3.6447	4.2389	0.0612	1.4800e-003	6.2084
Total											**13.0888**	**1,284.8891**	**1,297.9780**	**2.5441**	**3.9700e-003**	**1,362.7626**

	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**	**24.79**	**0.07**	**0.40**	**9.32**	**8.31**	**0.86**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coatings	Architectural Coating	10/3/2021	10/4/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coatings	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
Architectural Coatings	1	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coatings - 2021

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total											**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.2461	0.2461	1.0000e-005	0.0000	0.2462
Total											**0.0000**	**0.2461**	**0.2461**	**1.0000e-005**	**0.0000**	**0.2462**

3.2 Architectural Coatings - 2021

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total											**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.2461	0.2461	1.0000e-005	0.0000	0.2462
Total											**0.0000**	**0.2461**	**0.2461**	**1.0000e-005**	**0.0000**	**0.2462**

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											0.0000	1,070.3001	1,070.3001	1.7365	0.0000	1,113.7115
Unmitigated											0.0000	1,070.3001	1,070.3001	1.7365	0.0000	1,113.7115

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	600.00	600.00	600.00	111,384	111,384
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	600.00	600.00	600.00	111,384	111,384

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.51	0.51	0.51	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.000000	0.000000	0.000000	0.000000	0.260000	0.050000	0.020000	0.670000	0.000000	0.000000	0.000000	0.000000	0.000000
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Bakersfield Commercial Project Truck Only BAU - Kern-San Joaquin County, Annual

	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	153.1934	153.1934	6.9300e-003	1.4300e-003	153.7936
Electricity Unmitigated											0.0000	153.1934	153.1934	6.9300e-003	1.4300e-003	153.7936
NaturalGas Mitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	28.2037	1.2800e-003	2.6000e-004	28.3142
Convenience Market With Gas Pumps	91002.9	26.4738	1.2000e-003	2.5000e-004	26.5775
Fast Food Restaurant w/o Drive Thru	100960	29.3706	1.3300e-003	2.7000e-004	29.4856
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	69.1453	3.1300e-003	6.5000e-004	69.4163
Total		**153.1934**	**6.9400e-003**	**1.4300e-003**	**153.7936**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	28.2037	1.2800e-003	2.6000e-004	28.3142
Convenience Market With Gas Pumps	91002.9	26.4738	1.2000e-003	2.5000e-004	26.5775
Fast Food Restaurant w/o Drive Thru	100960	29.3706	1.3300e-003	2.7000e-004	29.4856
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	69.1453	3.1300e-003	6.5000e-004	69.4163
Total		**153.1934**	**6.9400e-003**	**1.4300e-003**	**153.7936**

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					
Mitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Unmitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.1300e-003**

6.2 Area by SubCategory

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.1300e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.1300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	4.2389	0.0612	1.4800e-003	6.2084
Unmitigated	5.2986	0.0765	1.8400e-003	7.7605

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	2.6008	0.0338	8.2000e-004	3.6891
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.6313	8.2000e-003	2.0000e-004	0.8955
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	2.0665	0.0345	8.3000e-004	3.1760
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**5.2986**	**0.0765**	**1.8500e-003**	**7.7605**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	2.0807	0.0270	6.5000e-004	2.9513
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.5050	6.5600e-003	1.6000e-004	0.7164
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	1.6532	0.0276	6.6000e-004	2.5408
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**4.2389**	**0.0612**	**1.4700e-003**	**6.2084**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

CalEEMod Output

Operations - GHG Passenger Vehicle Default Trip Length 2030

Bakersfield Commercial Passenger Vehicles 2030

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	24.00	Pump	0.08	3,388.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors 2020

Land Use -

Construction Phase - Operations only run

Vehicle Trips - Passenger vehicles regular trips

Fleet Mix - Passenger Vehicles only

Bakersfield Commercial Passenger Vehicles 2030 - Kern-San Joaquin County, Annual

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.14	0.00
tblFleetMix	LDA	0.51	0.60
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT2	0.18	0.21
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.0780e-003	0.00
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MDV	0.10	0.14
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.5600e-003	0.00
tblFleetMix	SBUS	8.2300e-004	0.00
tblFleetMix	UBUS	1.3980e-003	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	ST_TR	204.47	22.56
tblVehicleTrips	SU_TR	166.88	22.56
tblVehicleTrips	WD_TR	542.60	22.56

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					
2021											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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					
2021											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

	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**

Bakersfield Commercial Passenger Vehicles 2030 - Kern-San Joaquin County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Energy											0.0000	5.5670	5.5670	3.5000e-004	1.0000e-004	5.6050
Mobile											0.0000	82.7531	82.7531	2.4400e-003	0.0000	82.8141
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0796	0.2495	0.3291	8.2000e-003	2.0000e-004	0.5929
Total											**0.0796**	**88.5700**	**88.6497**	**0.0110**	**3.0000e-004**	**89.0125**

2.2 Overall Operational

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											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Energy											0.0000	5.5670	5.5670	3.5000e-004	1.0000e-004	5.6050
Mobile											0.0000	82.7531	82.7531	2.4400e-003	0.0000	82.8141
Waste											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water											0.0796	0.2495	0.3291	8.2000e-003	2.0000e-004	0.5929
Total											**0.0796**	**88.5700**	**88.6497**	**0.0110**	**3.0000e-004**	**89.0125**

	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	Architectural Coating	Architectural Coating	9/14/2021	9/20/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 5,082; Non-Residential Outdoor: 1,694; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
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
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total											**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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											0.0000	82.7531	82.7531	2.4400e-003	0.0000	82.8141
Unmitigated											0.0000	82.7531	82.7531	2.4400e-003	0.0000	82.8141

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	541.44	541.44	541.44	290,431	290,431
Total	541.44	541.44	541.44	290,431	290,431

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
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816

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	3.6324	3.6324	3.1000e-004	6.0000e-005	3.6589
Electricity Unmitigated											0.0000	3.6324	3.6324	3.1000e-004	6.0000e-005	3.6589
NaturalGas Mitigated											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
NaturalGas Unmitigated											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461

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					
Convenience Market With Gas Pumps	36253.7											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
Total												**0.0000**	**1.9346**	**1.9346**	**4.0000e-005**	**4.0000e-005**	**1.9461**

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					
Convenience Market With Gas Pumps	36253.7											0.0000	1.9346	1.9346	4.0000e-005	4.0000e-005	1.9461
Total												**0.0000**	**1.9346**	**1.9346**	**4.0000e-005**	**4.0000e-005**	**1.9461**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	27613.8	3.6324	3.1000e-004	6.0000e-005	3.6589
Total		**3.6324**	**3.1000e-004**	**6.0000e-005**	**3.6589**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	27613.8	3.6324	3.1000e-004	6.0000e-005	3.6589
Total		**3.6324**	**3.1000e-004**	**6.0000e-005**	**3.6589**

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					
Mitigated											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Unmitigated											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Total											**0.0000**	**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.0000**	**4.6000e-004**

6.2 Area by SubCategory

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	4.3000e-004	4.3000e-004	0.0000	0.0000	4.6000e-004
Total											**0.0000**	**4.3000e-004**	**4.3000e-004**	**0.0000**	**0.0000**	**4.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3291	8.2000e-003	2.0000e-004	0.5929
Unmitigated	0.3291	8.2000e-003	2.0000e-004	0.5929

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Total		**0.3291**	**8.2000e-003**	**2.0000e-004**	**0.5929**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Total		**0.3291**	**8.2000e-003**	**2.0000e-004**	**0.5929**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

CalEEMod Output

Operations - GHG Passenger Vehicles Diverted Link Trips 2030

Bakersfield Commercial Project Const and Pass Veh 2030

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project Const and Pass Veh 2030 - Kern-San Joaquin County, Annual

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Project schedule

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Off-road Equipment - Increased equipment numbers to conserve default hours from CalEEMod.

Architectural Coating - Rule 4601 compliant coatings

Vehicle Trips - Traffic Study Trip Generation Rate Diverted trips only

Area Coating - Rule 4601 compliant coatings

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Passenger Vehicle and Light Truck Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	65
tblAreaCoating	Area_EF_Nonresidential_Interior	150	65
tblConstructionPhase	NumDays	20.00	10.00
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.00
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDA	0.51	0.60
tblFleetMix	LDA	0.51	0.48

tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.04
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.21
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	LHD2	4.0780e-003	0.00
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003

tblFleetMix	MDV	0.10	0.12
tblFleetMix	MDV	0.10	0.14
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.00
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	OBUS	1.5600e-003	0.00
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	SBUS	8.2300e-004	0.00
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblFleetMix	UBUS	1.3980e-003	0.00

tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CC_TL	7.30	0.27
tblVehicleTrips	CNW_TL	7.30	0.27
tblVehicleTrips	CW_TL	9.50	0.27
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	165.46
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	165.46
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	165.46
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021											0.0000	5.0138	5.0138	2.3000e-004	0.0000	5.0196
Maximum											**0.0000**	**5.0138**	**5.0138**	**2.3000e-004**	**0.0000**	**5.0196**

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					
2021											0.0000	5.0138	5.0138	2.3000e-004	0.0000	5.0196
Maximum											**0.0000**	**5.0138**	**5.0138**	**2.3000e-004**	**0.0000**	**5.0196**

	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**

Bakersfield Commercial Project Const and Pass Veh 2030 - Kern-San Joaquin County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy											0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile											0.0000	173.6105	173.6105	7.9700e-003	0.0000	173.8098
Waste											16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water											0.7428	2.0600	2.8028	0.0765	1.8400e-003	5.2618
Total											**17.4022**	**302.6911**	**320.0934**	**1.0761**	**4.0900e-003**	**348.2138**

2.2 Overall Operational

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy											0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile											0.0000	173.6105	173.6105	7.9700e-003	0.0000	173.8098
Waste											12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water											0.5942	1.6480	2.2422	0.0612	1.4700e-003	4.2095
Total											**13.0888**	**302.2791**	**315.3679**	**0.8146**	**3.7200e-003**	**336.8432**

	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**	**24.79**	**0.14**	**1.48**	**24.30**	**9.05**	**3.27**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	12/16/2021	12/29/2021	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	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
Architectural Coating	2	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coating - 2021

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total											**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total											**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

3.2 Architectural Coating - 2021

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total											**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	2.4605	2.4605	6.0000e-005	0.0000	2.4620
Total											**0.0000**	**2.4605**	**2.4605**	**6.0000e-005**	**0.0000**	**2.4620**

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											0.0000	173.6105	173.6105	7.9700e-003	0.0000	173.8098
Unmitigated											0.0000	173.6105	173.6105	7.9700e-003	0.0000	173.8098

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	3,971.04	3,971.04	3971.04	390,274	390,274
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	3,971.04	3,971.04	3,971.04	390,274	390,274

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.27	0.27	0.27	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.600851	0.037764	0.210492	0.144240	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005839	0.000000	0.000816
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Bakersfield Commercial Project Const and Pass Veh 2030 - Kern-San Joaquin County, Annual

	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	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
Electricity Unmitigated											0.0000	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
NaturalGas Mitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

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					
Mitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Unmitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

6.2 Area by SubCategory

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2422	0.0612	1.4700e-003	4.2095
Unmitigated	2.8028	0.0765	1.8400e-003	5.2618

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	1.3557	0.0338	8.1000e-004	2.4426
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	1.1180	0.0345	8.3000e-004	2.2264
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8028**	**0.0765**	**1.8400e-003**	**5.2619**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	1.0846	0.0270	6.5000e-004	1.9541
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.2633	6.5600e-003	1.6000e-004	0.4743
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	0.8944	0.0276	6.6000e-004	1.7811
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.2422**	**0.0612**	**1.4700e-003**	**4.2095**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

CalEEMod Output

Operations - GHG Truck Only 2030

Bakersfield Commercial Project Truck Only 2030

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.78	Acre	2.78	121,096.80	0
Parking Lot	15.59	Acre	15.59	679,100.40	0
Fast Food Restaurant w/o Drive Thru	3.48	1000sqft	0.08	3,485.00	0
Automobile Care Center	10.99	1000sqft	0.25	10,992.00	0
Convenience Market With Gas Pumps	24.00	Pump	0.08	11,166.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Bakersfield Commercial Project Truck Only 2030 - Kern-San Joaquin County, Annual

Project Characteristics - PG&E 2020 Intensity Factor

Land Use - Total square feet for construction run

Construction Phase - Truck only run

Off-road Equipment - Increased equipment numbers to conserve default hours with shorter schedule.

Vehicle Trips - Traffic Study Trip Generation Rate

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation - Achieve 75 percent diversion mandate by 2020

Fleet Mix - Truck Only Run

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.67
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	HHD	0.14	0.15
tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDA	0.51	0.00
tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDA	0.51	0.48
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT1	0.03	0.03
tblFleetMix	LDT2	0.18	0.17

tblFleetMix	LDT2	0.18	0.00
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.26
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD1	0.01	0.02
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	LHD2	4.0780e-003	0.05
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	LHD2	4.0780e-003	5.9280e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	0.00
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MCY	5.4850e-003	5.8390e-003
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MDV	0.10	0.00
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MDV	0.10	0.12
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MH	5.3100e-004	0.00
tblFleetMix	MH	5.3100e-004	8.1600e-004

tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MH	5.3100e-004	8.1600e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	OBUS	1.5600e-003	0.00
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	OBUS	1.5600e-003	1.6200e-003
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	SBUS	8.2300e-004	0.00
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	SBUS	8.2300e-004	9.3100e-004
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblFleetMix	UBUS	1.3980e-003	0.00
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblFleetMix	UBUS	1.3980e-003	1.6640e-003
tblLandUse	LandUseSquareFeet	3,480.00	3,485.00
tblLandUse	LandUseSquareFeet	10,990.00	10,992.00
tblLandUse	LandUseSquareFeet	3,388.20	11,166.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	290

tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblVehicleTrips	CC_TL	7.30	0.51
tblVehicleTrips	CNW_TL	7.30	0.51
tblVehicleTrips	CW_TL	9.50	0.51
tblVehicleTrips	DV_TP	21.00	0.00
tblVehicleTrips	PB_TP	65.00	0.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	204.47	25.00
tblVehicleTrips	ST_TR	696.00	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	166.88	25.00
tblVehicleTrips	SU_TR	500.00	0.00
tblVehicleTrips	WD_TR	23.72	0.00
tblVehicleTrips	WD_TR	542.60	25.00
tblVehicleTrips	WD_TR	716.00	0.00

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					
2021											0.0000	0.3737	0.3737	1.0000e-005	0.0000	0.3741
Maximum											**0.0000**	**0.3737**	**0.3737**	**1.0000e-005**	**0.0000**	**0.3741**

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					
2021											0.0000	0.3737	0.3737	1.0000e-005	0.0000	0.3741
Maximum											**0.0000**	**0.3737**	**0.3737**	**1.0000e-005**	**0.0000**	**0.3741**

	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)
		Highest		

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy											0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile											0.0000	986.9724	986.9724	0.2088	0.0000	992.1924
Waste											16.6595	0.0000	16.6595	0.9846	0.0000	41.2731
Water											0.7428	2.0600	2.8028	0.0765	1.8400e-003	5.2618
Total											**17.4022**	**1,116.0531**	**1,133.4553**	**1.2769**	**4.0900e-003**	**1,166.5964**

2.2 Overall Operational

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											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Energy											0.0000	127.0196	127.0196	7.0800e-003	2.2500e-003	127.8679
Mobile											0.0000	986.9724	986.9724	0.2088	0.0000	992.1924
Waste											12.4946	0.0000	12.4946	0.7384	0.0000	30.9549
Water											0.5942	1.6480	2.2422	0.0612	1.4700e-003	4.2095
Total											**13.0888**	**1,115.6411**	**1,128.7299**	**1.0155**	**3.7200e-003**	**1,155.2257**

	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**	**24.79**	**0.04**	**0.42**	**20.47**	**9.05**	**0.97**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coatings	Architectural Coating	10/3/2021	10/4/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 18.37

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 38,465; Non-Residential Outdoor: 12,822; Striped Parking Area: 48,012 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coatings	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
Architectural Coatings	1	69.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Architectural Coatings - 2021

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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total											**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.2461	0.2461	1.0000e-005	0.0000	0.2462
Total											**0.0000**	**0.2461**	**0.2461**	**1.0000e-005**	**0.0000**	**0.2462**

3.2 Architectural Coatings - 2021

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.1277	0.1277	1.0000e-005	0.0000	0.1279
Total											**0.0000**	**0.1277**	**0.1277**	**1.0000e-005**	**0.0000**	**0.1279**

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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.2461	0.2461	1.0000e-005	0.0000	0.2462
Total											**0.0000**	**0.2461**	**0.2461**	**1.0000e-005**	**0.0000**	**0.2462**

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											0.0000	986.9724	986.9724	0.2088	0.0000	992.1924
Unmitigated											0.0000	986.9724	986.9724	0.2088	0.0000	992.1924

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	0.00	0.00	0.00		
Convenience Market With Gas Pumps	600.00	600.00	600.00	111,384	111,384
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	600.00	600.00	600.00	111,384	111,384

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
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Convenience Market With Gas	0.51	0.51	0.51	0.80	80.20	19.00	100	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	51	37	12
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	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
Automobile Care Center	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Convenience Market With Gas Pumps	0.000000	0.000000	0.000000	0.000000	0.260000	0.050000	0.020000	0.670000	0.000000	0.000000	0.000000	0.000000	0.000000
Fast Food Restaurant w/o Drive Thru	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816
Parking Lot	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Bakersfield Commercial Project Truck Only 2030 - Kern-San Joaquin County, Annual

	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	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
Electricity Unmitigated											0.0000	69.2696	69.2696	5.9700e-003	1.1900e-003	69.7748
NaturalGas Mitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931
NaturalGas Unmitigated											0.0000	57.7499	57.7499	1.1100e-003	1.0600e-003	58.0931

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.2 Energy by Land Use - NaturalGas

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					
Automobile Care Center	229403											0.0000	12.2418	12.2418	2.3000e-004	2.2000e-004	12.3146
Convenience Market With Gas Pumps	119476											0.0000	6.3757	6.3757	1.2000e-004	1.2000e-004	6.4136
Fast Food Restaurant w/o Drive Thru	733314											0.0000	39.1324	39.1324	7.5000e-004	7.2000e-004	39.3650
Other Non-Asphalt Surfaces	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**57.7499**	**57.7499**	**1.1000e-003**	**1.0600e-003**	**58.0931**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	96949.4	12.7529	1.1000e-003	2.2000e-004	12.8459
Convenience Market With Gas Pumps	91002.9	11.9707	1.0300e-003	2.1000e-004	12.0580
Fast Food Restaurant w/o Drive Thru	100960	13.2805	1.1400e-003	2.3000e-004	13.3774
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	237685	31.2655	2.7000e-003	5.4000e-004	31.4936
Total		**69.2696**	**5.9700e-003**	**1.2000e-003**	**69.7748**

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					
Mitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Unmitigated											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

6.2 Area by SubCategory

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	1.0200e-003	1.0200e-003	0.0000	0.0000	1.0800e-003
Total											**0.0000**	**1.0200e-003**	**1.0200e-003**	**0.0000**	**0.0000**	**1.0800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.2422	0.0612	1.4700e-003	4.2095
Unmitigated	2.8028	0.0765	1.8400e-003	5.2618

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	1.03395 / 0.633712	1.3557	0.0338	8.1000e-004	2.4426
Convenience Market With Gas Pumps	0.250972 / 0.153822	0.3291	8.2000e-003	2.0000e-004	0.5929
Fast Food Restaurant w/o Drive Thru	1.0563 / 0.0674232	1.1180	0.0345	8.3000e-004	2.2264
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.8028**	**0.0765**	**1.8400e-003**	**5.2619**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	0.827161 / 0.50697	1.0846	0.0270	6.5000e-004	1.9541
Convenience Market With Gas Pumps	0.200778 / 0.123057	0.2633	6.5600e-003	1.6000e-004	0.4743
Fast Food Restaurant w/o Drive Thru	0.845038 / 0.0539386	0.8944	0.0276	6.6000e-004	1.7811
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**2.2422**	**0.0612**	**1.4700e-003**	**4.2095**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.4946	0.7384	0.0000	30.9549
Unmitigated	16.6595	0.9846	0.0000	41.2731

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	41.98	8.5216	0.5036	0.0000	21.1118
Fast Food Restaurant w/o Drive Thru	40.09	8.1379	0.4809	0.0000	20.1613
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**16.6595**	**0.9846**	**0.0000**	**41.2731**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	31.485	6.3912	0.3777	0.0000	15.8339
Fast Food Restaurant w/o Drive Thru	30.0675	6.1034	0.3607	0.0000	15.1210
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.4946**	**0.7384**	**0.0000**	**30.9548**

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

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Appendix B: San Joaquin Valley Air Pollution Control District Amicus Brief on Friant Ranch Supreme Court Decision

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SUPREME COURT COPY

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

SUPREME COURT
FILED
APR 13 2015
Frank A. McGuire Clerk
Deputy

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

---

[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

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[6] CEQA does not require speculation. *See, e.g.*, *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

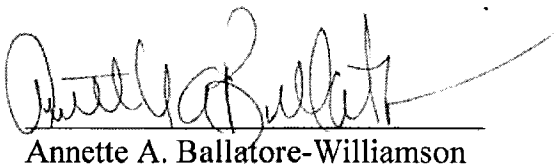
Rule 8.520 Disclosure

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

CONCLUSION

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015



Annette A. Ballatore-Williamson
District Counsel
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CASE NO. S219783

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I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

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[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf (visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041l.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015

Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel (SBN 192176)

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO

On all parties to this action at the following addresses and in the following manner:

PLEASE SEE ATTACHED SERVICE LIST

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

SERVICE LIST

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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Appendix C: Health Risk Assessment

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Appendix C

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Bakersfield Commercial Project: Bakersfield

2022

DPM Emissions

Emission Assumptions

Emission Factors

Truck Exhaust and Idling Emissions and TRU Emissions

(1) EMFAC2017		
(a) Calculations for	Kern County	
(b) Truck Mix	Based on Project Traffic Impact Report and Data from the Applicant	
	EMFAC2017 to derive the number of diesel truck vehicles	
(c) Truck Idle Time:	10	minutes (truck idling within the fueling area 5 min waiting and 5 min startup)
(d) Truck Idle Time	5	minutes (truck idling non-overnight parking area -truck arrives and shuts down)
(d) Truck Overnight Idling:	3	hours while in the overnight parking area (30 min/hour for 6 hours)
(e) % of DSL Trucks with TRU	25%	
(f) TRU operations while in Fueling area	30	minutes (time to fuel truck)
(g) TRU operations in overnight area	6	hours while in the overnight parking area (assumes the overnight stay is 6 hours)
(h) TRU operations in non-overnight area	30	minutes (TRU running while truck parked for restaurant and convenience store use)
(i) Onsite Vehicle Travel Speed	5 to 15	mph
(j) Offsite Vehicle Travel Speed	5 to 25	mph
(k) Number of trucks using the fueling area	235	trucks/day
(l) Number of overnight trucks	70	trucks/day
(m) Number of trucks in the non-overnight area withi plug-ins	12	trucks/day
(m) Number of trucks in the non-overnight area for restaurant and convenience store	195	trucks/day (total number of DSL trucks - the number of overnight trucks)

Traffic Allocation

Driveway 1: DSL Vehicles: LLHDT1, LHDT2, T6-MHDT, T7-HHDT

Emission Source Configuration

1) Onsite vehicle traffic from Driveway 1 to fueling area and back to Driveway 1 treated as a line source
2)Offsite vehicle traffic to Driveway 1 treated as a line source
3) Onsite overnight truck emissions treated as a point source
4) Onsite idling at the refuleing area treated as a point source

Onsite Diesel Truck Travel Segments

Segment	Onsite Truck Travel Distance (m)
ON1 - Driveway 1 to DSL Refueling Area to Parking Area to Driveway 1	1006

Offsite Vehicle Travel Segments

Segment	Offsite Segment Trip Distance (m)	Trip Distribution (%)
OFF1 -SR99 North Offramp to Driveway 1	847	17.5%
OFF2 - SR99 North Onramp from Driveway 1	866	17.5%
OFF3 - East on Taft Highway to Driveway 1	454	15.0%
OFF4 - West on Taft Highway from Driveway 1	1496	15.0%
OFF5 - SR99 South Offramp to Driveway 1	1066	17.5%
OFF6 - SR99 South Onramp from Driveway 1	1347	17.5%

Other Input Parameters

Facility Operations (hr/day): 24

Bakersfield Commercial Project: Bakersfield 2022 Pollutant: DPM

Emission Source	AERMOD Source Number	Total Emissions (grams/sec)	Total Emissions (lbs/day)	Total Emissions (lbs/year)
Onsite Truck Emissions				
Onsite DSL Truck Travel		1.03E-04	1.96E-02	7.17E+00
Onsite TRU Travel		6.57E-06	1.25E-03	4.56E-01
Total	**ON1**	**1.10E-04**	**2.09E-02**	**7.62E+00**
Onsite Truck Idling Emissions at Fueling Area				
Onsite Truck Idling		6.96E-05	1.32E-02	4.83E+00
Onsite TRU Operations		4.65E-05	8.85E-03	3.23E+00
Total	**FUELAREA**	**1.16E-04**	**2.21E-02**	**8.07E+00**
Onsite Truck Idling for Overnight Parking				
Onsite Truck Idling		4.501E-04	8.56E-02	3.13E+01
Onsite TRU Operations		1.663E-04	3.16E-02	1.15E+01
Total	**OVERNIGHT**	**6.163E-04**	**1.17E-01**	**4.28E+01**
Onsite Truck Idling for Non-Overnight Parking	**NONOVER**			
Onsitr Truck Idling		4.21E-05	8.02E-03	2.93E+00
Onsite TRU Operations		3.87E-05	7.36E-03	2.69E+00
Total		**8.08E-05**	**1.54E-02**	**5.61E+00**
Offsite Truck Emissions				
OFF1 Truck Travel		2.418E-05	4.60E-03	1.68E+00
OFF1 TRU Operation		1.290E-06	2.45E-04	8.96E-02
Total	**OFF1**	**2.547E-05**	**4.85E-03**	**1.77E+00**
OFF2 Truck Travel		2.472E-05	4.71E-03	1.72E+00
OFF2 TRU Operation		1.319E-06	2.51E-04	9.16E-02
Total	**OFF2**	**2.604E-05**	**4.96E-03**	**1.81E+00**
OFF3 Truck Travel		1.111E-05	2.11E-03	7.72E-01
OFF3 TRU Operation		5.926E-07	1.13E-04	4.12E-02
Total	**OFF3**	**1.170E-05**	**2.23E-03**	**8.13E-01**
OFF4 Truck Travel		3.661E-05	6.97E-03	2.54E+00
OFF4 TRU Operation		1.953E-06	3.72E-04	1.36E-01
Total	**OFF4**	**3.856E-05**	**7.34E-03**	**2.68E+00**
OFF5 Truck Travel		3.043E-05	5.79E-03	2.11E+00
OFF5 TRU Operation		1.623E-06	3.09E-04	1.13E-01
Total	**OFF5**	**3.206E-05**	**6.10E-03**	**2.23E+00**
OFF6 Truck Travel		3.846E-05	7.32E-03	2.67E+00
OFF6 TRU Operation		2.051E-06	3.90E-04	1.42E-01
Total	**OFF6**	**4.051E-05**	**7.71E-03**	**2.81E+00**
Total		1.10E-03	**2.09E-01**	**7.62E+01**

Bakersfield Commercial Project: Bakersfield 2022 Daily

Vehicle Fleet Mix

	Total Daily Trips (Trips/day)	
Project	5,113	Project Traffic Study
Cars Trips	4,513	
Trucks Trips	600	

Vehicle Fleet for Project

Truck Distribution as per CalTrans Census

2-axle	26.00%
3-axle	5.00%
4+axle	69.00%
	100.00%

Truck Type	% All Trucks	% DSL Vehicles	Number of Daily Diesel Trips	Number of Daily Non-Diesel Trucks	Total	DSL % Total
LHD1	19.9%	53.70%	64	55	119	12.1%
LHD2	6.1%	70.41%	26	11	37	4.9%
T6 instate heavy	5.0%	90.00%	27	3	30	5.1%
T7 tractor	69.0%	99.99%	414	0	414	78.0%
	100.0%		531	69	600	
		Total Number of Trucks	265	35	300	

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: KERN
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Y	Vehicle Catego	Model Year	Speed	Fuel	Population	VMT
KERN	2021	LHDT1	Aggregated	Aggregated	DSL	15534.03	537546.2
KERN	2021	LHDT2	Aggregated	Aggregated	DSL	6166.435	215934.8
KERN	2021	MDV	Aggregated	Aggregated	DSL	2864.439	117283.6
KERN	2021	MHDT	Aggregated	Aggregated	DSL	11530.42	719828.4
KERN	2021	T7-HHDT	Aggregated	Aggregated	DSL	31826.23	4754315

Vehicle	DSL-VMT	GAS-VMT	Total	%DSL	%GAS	Total
LHDT1	**537546.1522**	**463517.2908**	**1001063.44**	**53.7%**	46.3%	**77%**
LHDT2	**215934.8454**	**90759.85499**	**306694.7**	**70.4%**	29.6%	**23%**
			1307758.14			
MHDT	719828.3632	79997.89778	799826.261	**90.0%**	**10.0%**	
HHDT	4754315.289	347.6656057	4754662.95	**100.0%**	**0.0%**	
Total	6227624.65	634622.7091	6862247.36	**90.8%**	**9.2%**	

Bakersfield Commercial Project: Bakersfield

Estimation of Onsite Truck Travel - from Driveway 1 to Refueling Area to Parking Area to Driveway 1
Project Operations 24 hours/day
AERMOD Source Number: ON1

Truck Type	Trips/day	Trucks/day	Emission Factor 5 to 15 mph (g/mile)	Truck Round-Trip Distance (mile/truck)	Daily Emissions (g/day)	Daily Emissions (g/sec)
LHDT1	64	32	0.0654	0.625	1.310	1.516E-05
LHDT2	26	13	0.0575	0.625	0.463	5.355E-06
T6 instate heavy	27	13	0.0743	0.625	0.627	7.252E-06
T7 tractor	414	207	0.0504	0.625	6.516	7.542E-05
Total	**531**	**265**			**8.915**	**1.032E-04**

Bakersfield Commercial Project: Bakersfield 2022 DPM Emissions

Offsite Diesel Truck Roadway Emissions (trip percentages provided by the client)

Segment ID	Description
OFF1	SR99 Northbound Offramp to Driveway 3

Assumes emission factors for vehicle speed of 5 to 25 mph for all vehicles

Segment ID: **OFF1**

Travel Distance: 847 meters or 0.526 miles
Operations 24 hours/day
Trip Distribution 17.5%

Vehicle Class	Fuel Type	Daily Trips (trips/day)	Emission Factor (g/mi)	Travel Distance (mi)	Emissions (g/day)	Emissions (g/sec)
LHDT1	DSL	11	0.053	0.526	0.312	3.607E-06
LHDT2	DSL	5	0.047	0.526	0.111	1.289E-06
T6 instate heavy	DSL	5	0.057	0.526	0.141	1.633E-06
T7	DSL	72	0.040	0.526	1.525	1.765E-05
Total		**93**				**2.418E-05**

Segment ID	Description
OFF2	SR99 Southbound Offramp to Driveway 3

Assumes a vehicle speed of 5 to 25 mph for all vehicles

Segment ID: **OFF2**

Travel Distance: 866 meters or 0.538 miles

Operations 24 hours/day

Trip Distribution 17.5%

Vehicle Class	Fuel Type	Daily Trips (trips/day)	Emission Factor (g/mi)	Travel Distance (mi)	Emissions (g/day)	Emissions (g/sec)
LHDT1	DSL	11	0.053	0.538	0.319	3.688E-06
LHDT2	DSL	5	0.047	0.538	0.114	1.318E-06
T6 instate heavy	DSL	5	0.057	0.538	0.144	1.670E-06
T7	DSL	72	0.040	0.538	1.559	1.805E-05
Total		**93**				**2.472E-05**

Segment ID	Description
OFF3	East onTaft Highway to Driveway 3

Assumes a vehicle speed of 5 to 25 mph for all vehicles

Segment ID: **OFF3**

Travel Distance: 454 meters or 0.282 miles
Operations 24 hours/day
Trip Distribution 15%

Vehicle Class	Fuel Type	Daily Trips (trips/day)	Emission Factor (g/mi)	Travel Distance (mi)	Emissions (g/day)	Emissions (g/sec)
LHDT1	DSL	10	0.053	0.282	0.143	1.657E-06
LHDT2	DSL	4	0.047	0.282	0.051	5.923E-07
T6 instate heavy	DSL	4	0.057	0.282	0.065	7.503E-07
T7	DSL	62	0.040	0.282	0.701	8.110E-06
Total		**80**				**1.111E-05**

Segment ID	Description
OFF4	West on Taft Highway to Driveway 3

Segment ID: **OFF4**

Travel Distance: 1496 meters or 0.929 miles
Operations 24 hours/day
Trip Distribution 15%

Truck Type	Fuel Type	Daily Trips (trips/day)	Emission Factor (g/mi)	Travel Distance (mi)	Emissions (g/day)	Emissions (g/sec)
LHDT1	DSL	10	0.053	0.929	0.472	5.461E-06
LHDT2	DSL	4	0.047	0.929	0.169	1.952E-06
T6 instate heavy	DSL	4	0.057	0.929	0.214	2.472E-06
T7 tractor	DSL	62	0.040	0.929	2.309	2.672E-05
Total		**80**				**3.661E-05**

Segment ID	Description
OFF5	SR99 Southbound Offramp to Driveway 1

Segment ID: **OFF5**
Travel Distance: 1066 meters or 0.662 miles
Operations 24 hours/day
Trip Distribution 17.5%

Truck Type	Fuel Type	Daily Trips (trips/day)	Emission Factor (g/mi)	Travel Distance (mi)	Emissions (g/day)	Emissions (g/sec)
LHDT1	DSL	11	0.053	0.662	0.392	4.540E-06
LHDT2	DSL	5	0.047	0.662	0.140	1.623E-06
T6 instate heavy	DSL	5	0.057	0.662	0.178	2.055E-06
T7 tractor	DSL	72	0.040	0.662	1.920	2.222E-05
Total		**93**				**3.043E-05**

Segment ID	Description
OFF6	SR99 Southbound Onramp from Driveway 1

Segment ID: **OFF6**
Travel Distance: 1347 meters or 0.837 miles
Operations 24 hours/day
Trip Distribution 17.5%

Truck Type	Fuel Type	Daily Trips (trips/day)	Emission Factor (g/mi)	Travel Distance (mi)	Emissions (g/day)	Emissions (g/sec)
LHDT1	DSL	11	0.053	0.837	0.496	5.736E-06
LHDT2	DSL	5	0.047	0.837	0.177	2.050E-06
T6 instate heavy	DSL	5	0.057	0.837	0.224	2.597E-06
T7 tractor	DSL	72	0.040	0.837	2.426	2.807E-05
Total		**93**				**3.846E-05**

Bakersfield Commercial Project: Bakersfield Year: 2022 DPM

Estimation of Idling Emissions at the Diesel Truck Refueling Location

Operations 24 hours/day

DSL Truck Emissions While Idling at the Fueling Area

Truck Idling Duration: 10 min/truck/day
Number of DSL Trucks Refueling per day 235 trucks/day

Building/Location	Truck Type	Number of Idling Trucks at Refueling Location	Emission Factor (g/idle-hour)	Idling Time (min)	Emissions (g/day)	Emissions (lb/day)	Average Emissions (g/sec)
DSL Fueling Area	LHDT1	28	0.791	10	3.74E+00	8.24E-03	4.33E-05
	LHDT2	11	0.795	10	1.51E+00	3.33E-03	1.75E-05
	T6 instate heavy	12	0.078	10	1.56E-01	3.43E-04	1.80E-06
	T7 tractor	183	0.020	10	6.04E-01	1.33E-03	6.99E-06
	Total	**235**				**1.32E-02**	**6.96E-05**

Bakersfield Commercial Project: Bakersfield

DPM Idling Emissions from Non-Overnight Truck Parking Area

Number of DSL Trucks Non-Overnight Area	195	trucks/day
Idling Time	5	min/day/truck
Daily Operations	24	

Truck Typ	Number of Vehicle	Idling Factor (g/hr)	Total Daily Emissions (g/day)	Total Daily Emissions (g/sec)
LHDT1	39	0.791	2.56	2.968E-05
LHDT2	12	0.795	0.79	9.133E-06
T6 instate	10	0.078	0.06	7.369E-07
T7 tractor	135	0.020	0.22	2.573E-06
Total	**195**		**3.64**	**4.212E-05**

Bakersfield Commercial Project: Bakersfield

DPM Emisions from Overnight Truck Parking

Number of DSL Trucks Overnight	70	trucks/day
Number od DSL Trucks with Plug-ins	12	trucks/day
Number of Non-Plug-in DSL Trucks	58	trucks/day
Operational Day	24	hours/day
Idling Time	3	hours/truck/day

Truck Type	Number of Vehicle	Idling Factor (g/hr)	Total Daily Emissions (g/day)	Total Daily Emissions (g/sec)
LHDT1	12	0.791	27.40	3.171E-04
LHDT2	4	0.795	8.43	9.758E-05
T6 instate heavy	3	0.078	0.68	7.873E-06
T7 tractor	40	0.020	2.38	2.749E-05
Total	**58**		**38.88**	**4.501E-04**

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: KERN
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	alendar Ye	Vehicle Category	Model Year	Speed	Fuel	PM10_RUNEX	Average 5 to 15 mph	Average 5 to 25 mph
KERN	2022	LHDT1	Aggregated	5	DSL	0.0856	0.0654	0.0528
KERN	2022	LHDT2	Aggregated	5	DSL	0.0737	0.0575	0.0470
KERN	2022	T6 instate heavy	Aggregated	5	DSL	0.0948	0.0743	0.0568
KERN	2022	T7 tractor	Aggregated	5	DSL	0.0621	0.0504	0.0400
KERN	2022	LHDT1	Aggregated	10	DSL	0.0627		
KERN	2022	LHDT2	Aggregated	10	DSL	0.0557		
KERN	2022	T6 instate heavy	Aggregated	10	DSL	0.0783		
KERN	2022	T7 tractor	Aggregated	10	DSL	0.0522		
KERN	2022	LHDT1	Aggregated	15	DSL	0.0477		
KERN	2022	LHDT2	Aggregated	15	DSL	0.0431		
KERN	2022	T6 instate heavy	Aggregated	15	DSL	0.0497		
KERN	2022	T7 tractor	Aggregated	15	DSL	0.0368		
KERN	2022	LHDT1	Aggregated	20	DSL	0.0374		
KERN	2022	LHDT2	Aggregated	20	DSL	0.0343		
KERN	2022	T6 instate heavy	Aggregated	20	DSL	0.0340		
KERN	2022	T7 tractor	Aggregated	20	DSL	0.0265		
KERN	2022	LHDT1	Aggregated	25	DSL	0.0304		
KERN	2022	LHDT2	Aggregated	25	DSL	0.0281		
KERN	2022	T6 instate heavy	Aggregated	25	DSL	0.0270		
KERN	2022	T7 tractor	Aggregated	25	DSL	0.0224		

Idling Emissions - EMFAC2017for Kern County (SJV)

Year	Calendar	Region	Truck Class	Fuel	PM10 Idling Emission Factor (g/idle-hr)
2022	Annual	Kern (SJV)	LHDT1	Dsl	0.7912
2022	Annual	Kern (SJV)	LHDT2	Dsl	0.7946
2022	Annual	Kern (SJV)	T6 instate heavy	Dsl	0.0782
2022	Annual	Kern (SJV)	T7 tractor	Dsl	0.0198

Bakersfield Commercial Project: Bakersfield **DPM**

Emissions from the Operation of Transportation Refrigeration Units (TRU)

Project Operations	24	hours/day	
Number of DSL Trucks Visiting Facility	265	trucks/day	
Number of DSL Trucks at the refueling area/day	235	trucks/day	
Percent of DSL Trucks with TRUs	25%		Reference 1
Number of DSL Trucks with a TRU at the Fueling Area/day	59		

TRU Operating Parameters

Size:	36	horsepower	
Load Factor	38%		
On/Off Cycle Factor	50%		
Emission Release Height	13	feet	
Emission Release Diameter	0.04	meters	
Emission Temperature	501	K	
Emission Factor:	0.02	g/hp-hr	Reference 2
Emission Rate	0.1368	grams/hr	

Reference 1: Based on sales of dry vans vs reefer vans: ACT Research 2016: http://www.actresearch.net/wp-content/uploads/trlr1506.pdf

Reference 2: Dieselnet.com Tier 4 Emisison Standards
Website: https://dieselnet.com/standards/us/nonroad.php

TRU Emissions while Waiting for Truck Fueling in the Fuel Area

Number of DSL Trucks with TRU at Fueling Area	59	per day		
Duration of Idling while at Fuelng Area	30	minutes/TRU/day		
Total Number of TRU minutes per day	1762.5	or	29.375	hours/day
Emissions	**4.019**	**grams/day for all TRUs**		
	4.651E-05	**grams/sec for all TRUs**		

TRU Emissions While Travel Onsite - ON1

Number Trucks with TRUs	66			
Onsite Travel Distance	1006	meters or	0.625	miles
HHT Vehicle Speed	10	miles per hour, average onsite vehicle speed		
TRU Operation While Traveling Onsite	0.0625	hours/TRU		
Emissions (all TRUs)	**0.5673**	**grams/day for all TRUs**		
	6.566E-06	**grams/sec for all TRUs**		

TRU Emissions While Operating within the Extended Parking Area - OPARK

Number of DSL Trucks requiring overnight stay	70	
% DSL Trucks with TRUs	25%	
Number of TRUs	18	per day
Time of operation	6	hours/TRU/day
Operations	105.00	total hours of operation for all TRUs
Emissions (all TRUs)	**14.364**	**grams/day**
	1.663E-04	**grams/sec**

TRU Emissions While Operaitng within the Non-Overnight Parking Area

Number of DSL Trucks not requiring overnight stay	195	
% DSL Trucks with TRUs	25%	
Number of TRUs	49	per day
Time of operation	0.50	hours/TRU/day
Operations	24.43	total hours of operation for all TRUs
Emissions (all TRUs)	**3.342**	**grams/day**
	3.868E-05	**grams/sec**

TRU Emissions from Offsite DSL Truck Travel

Number of DSL Truck Trips	531	per day
% DSL Trucks with TRU	25%	
Number DSL Truck Trips with TRUs	133	

OFF1

Number of DSL Truck Trips with TRU - OFF1	23	per day
Vehicle Speed	15	mph
Trip Length	0.53	miles
Time on Travel Link	0.8147	hours/day
TRU Emission Rate	0.1368	grams/hour
Emissions	**0.111**	**grams/day**
	1.29E-06	**grams/sec**

OFF2

Number of DSL Truck Trips with TRU - OFF2	23	per day
Vehicle Speed	15	mph
Trip Length	0.54	miles
Time on Travel Link	0.8329	hours/day
TRU Emission Rate	0.1368	grams/hour
Emissions	**0.114**	**grams/day**
	1.32E-06	**grams/sec**

OFF3			
	Number of DSL Truck Trips with TRU - OFF3	20	per day
	Vehicle Speed	15	mph
	Trip Length	0.28	miles
	Time on Travel Link	0.3743	hours/day
	TRU Emission Rate	0.1368	grams/hour
	Emissions	**0.051**	**grams/day**
		5.93E-07	**grams/sec**
OFF4			
	Number of DSL Truck Trips with TRU - OFF4	20	per day
	Vehicle Speed	15	mph
	Trip Length	0.93	miles
	Time on Travel Link	1.2333	hours/day
	TRU Emission Rate	0.1368	grams/hour
	Emissions	**0.169**	**grams/day**
		1.95E-06	**grams/sec**
OFF5			
	Number of DSL Truck Trips with TRU - OFF5	23	per day
	Vehicle Speed	15	mph
	Trip Length	0.66	miles
	Time on Travel Link	1.0253	hours/day
	TRU Emission Rate	0.1368	grams/hour
	Emissions	**0.140**	**grams/day**
		1.62E-06	**grams/sec**
OFF6			
	Number of DSL Truck Trips with TRU - OFF6	23	per day
	Vehicle Speed	15	mph
	Trip Length	0.84	miles
	Time on Travel Link	1.2956	hours/day
	TRU Emission Rate	0.1368	grams/hour
	Emissions	**0.177**	**grams/day**
		2.05E-06	**grams/sec**

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.

**Other Options Specified:
ADJ_U* - Use ADJ_U* option for SBL in AERMET
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 1108 Source(s); 1 Source Group(s); and 71 Receptor(s)

with: 2 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 1106 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 18081

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 14.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 4.0 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

```
**Detailed Error/Message File:   BAKCC_DPM_2022.err
**File for Summary of Results:   BAKCC_DPM_2022.sum
♀*** AERMOD - VERSION  18081 ***   *** Bakersfield Commerce Center                         ***      10/17/19
*** AERMET - VERSION  18081 ***   *** DPM - 2022                                          ***      13:36:23
                                                                                    PAGE   2
*** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                         (1=YES; 0=NO)

      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
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      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
      1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

       NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.


                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                       (METERS/SEC)

                              1.54,   3.09,   5.14,   8.23,  10.80,
♀*** AERMOD - VERSION  18081 ***   *** Bakersfield Commerce Center                         ***      10/17/19
*** AERMET - VERSION  18081 ***   *** DPM - 2022                                          ***      13:36:23
                                                                                    PAGE   3
*** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

  Surface file:   ..\Arvin_2007-2011.SFC                                   Met Version:  18081
  Profile file:   ..\Arvin_2007-2011.PFL
  Surface format: FREE
  Profile format: FREE
  Surface station no.:   99001            Upper air station no.:   66666
           Name: UNKNOWN                            Name: UNKNOWN
           Year:   2007                          Year:   2007

 First 24 hours of scalar data
 YR MO DY JDY HR    H0    U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA    HT
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 07 01 01    1 01  -27.9  0.280 -9.000 -9.000 -999.  355.     86.2  0.03   0.72   1.00    4.60  131.   14.0  279.0    2.0
 07 01 01    1 02  -31.1  0.312 -9.000 -9.000 -999.  417.    106.8  0.03   0.72   1.00    5.10  128.   14.0  278.8    2.0
 07 01 01    1 03  -27.9  0.280 -9.000 -9.000 -999.  356.     86.2  0.03   0.72   1.00    4.60  134.   14.0  278.6    2.0
 07 01 01    1 04  -24.8  0.248 -9.000 -9.000 -999.  297.     67.8  0.03   0.72   1.00    4.10  133.   14.0  278.2    2.0
 07 01 01    1 05  -21.6  0.216 -9.000 -9.000 -999.  242.     51.5  0.03   0.72   1.00    3.60  133.   14.0  277.9    2.0
 07 01 01    1 06  -17.0  0.185 -9.000 -9.000 -999.  191.     37.5  0.03   0.72   1.00    3.10  132.   14.0  277.6    2.0
 07 01 01    1 07  -17.0  0.185 -9.000 -9.000 -999.  190.     37.5  0.03   0.72   1.00    3.10  135.   14.0  277.2    2.0
 07 01 01    1 08   -7.0  0.122 -9.000 -9.000 -999.  103.     22.9  0.03   0.72   0.59    2.10  133.   14.0  277.0    2.0
 07 01 01    1 09   18.5  0.089  0.474  0.005  204.   63.     -3.3  0.02   0.72   0.33    1.00  197.   14.0  278.0    2.0
 07 01 01    1 10   58.2  0.130  0.941  0.006  508.  112.     -3.3  0.02   0.72   0.25    1.50  251.   14.0  279.1    2.0
 07 01 01    1 11   86.5  0.172  1.180  0.009  673.  171.     -5.2  0.02   0.72   0.22    2.10  264.   14.0  279.9    2.0
 07 01 01    1 12  100.8  0.174  1.295  0.010  762.  174.     -4.6  0.02   0.72   0.21    2.10  266.   14.0  280.5    2.0
 07 01 01    1 13  100.6  0.195  1.337  0.010  841.  207.     -6.6  0.04   0.72   0.21    2.10  283.   14.0  281.0    2.0
 07 01 01    1 14   85.9  0.135  1.300  0.011  904.  120.     -2.5  0.02   0.72   0.22    1.50  269.   14.0  281.5    2.0
 07 01 01    1 15   57.3  0.130  1.152  0.012  943.  112.     -3.4  0.02   0.72   0.25    1.50  262.   14.0  281.8    2.0
 07 01 01    1 16   17.3  0.117  0.777  0.012  954.   95.     -8.1  0.02   0.72   0.34    1.50  254.   14.0  281.4    2.0
 07 01 01    1 17   -1.8  0.068 -9.000 -9.000 -999.   43.     14.9  0.02   0.72   0.61    1.00  211.   14.0  280.4    2.0
 07 01 01    1 18   -0.9  0.063 -9.000 -9.000 -999.   38.     23.5  0.03   0.72   1.00    0.50  127.   14.0  279.9    2.0
 07 01 01    1 19   -1.1  0.068 -9.000 -9.000 -999.   42.     25.4  0.07   0.72   1.00    0.50   54.   14.0  279.8    2.0
 07 01 01    1 20   -2.5  0.079 -9.000 -9.000 -999.   54.     17.3  0.07   0.72   1.00    1.00   37.   14.0  279.6    2.0
 07 01 01    1 21   -4.9  0.101 -9.000 -9.000 -999.   77.     18.8  0.07   0.72   1.00    1.50   30.   14.0  279.6    2.0
 07 01 01    1 22  -10.8  0.153 -9.000 -9.000 -999.  144.     29.6  0.10   0.72   1.00    2.10   22.   14.0  279.8    2.0
 07 01 01    1 23  -10.8  0.153 -9.000 -9.000 -999.  144.     29.6  0.10   0.72   1.00    2.10   10.   14.0  279.6    2.0
 07 01 01    1 24  -16.8  0.193 -9.000 -9.000 -999.  204.     41.0  0.10   0.72   1.00    2.60  360.   14.0  279.2    2.0
```

First hour of profile data
YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
07 01 01 01 14.0 1 131. 4.60 279.1 99.0 -99.00 -99.00

F indicates top of profile (=1) or below (=0)
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/17/19
*** AERMET - VERSION 18081 *** *** DPM - 2022 *** 13:36:23
PAGE 4
*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
ALL	1ST HIGHEST VALUE IS	0.01504 AT (316543.52, 3904481.34, 105.46, 105.46, 0.00) DC
	2ND HIGHEST VALUE IS	0.01492 AT (316517.36, 3904479.60, 105.46, 105.46, 0.00) DC
	3RD HIGHEST VALUE IS	0.01351 AT (316431.79, 3904473.55, 105.46, 105.46, 0.00) DC
	4TH HIGHEST VALUE IS	0.01345 AT (316380.20, 3904474.65, 105.46, 105.46, 0.00) DC
	5TH HIGHEST VALUE IS	0.01342 AT (316469.24, 3904472.82, 105.46, 105.46, 0.00) DC
	6TH HIGHEST VALUE IS	0.01341 AT (316404.25, 3904473.74, 105.46, 105.46, 0.00) DC
	7TH HIGHEST VALUE IS	0.01322 AT (316451.43, 3904471.90, 105.46, 105.46, 0.00) DC
	8TH HIGHEST VALUE IS	0.01316 AT (316495.50, 3904471.72, 105.46, 105.46, 0.00) DC
	9TH HIGHEST VALUE IS	0.01298 AT (316584.79, 3904480.34, 105.46, 105.46, 0.00) DC
	10TH HIGHEST VALUE IS	0.01263 AT (316517.36, 3904469.60, 105.46, 105.46, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/17/19
*** AERMET - VERSION 18081 *** *** DPM - 2022 *** 13:36:23
PAGE 5
*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	0.24448 ON 07021708:	AT (316517.36, 3904479.60, 105.46, 105.46, 0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/17/19
*** AERMET - VERSION 18081 *** *** DPM - 2022 *** 13:36:23
PAGE 6
*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 3 Warning Message(s)
A Total of 449 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 449 Calm Hours Identified

A Total of 0 Missing Hours Identified (0.00 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********

SO W320	2076	PPARM: Input Parameter May Be Out-of-Range for Parameter	VS
SO W320	2077	PPARM: Input Parameter May Be Out-of-Range for Parameter	VS
ME W187	2435	MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET	

Bakersdield Commerce Center

Summary of VOC Emissions Annual Throughput: 2,500,000 gallons/year

Process	VOC Emissions (lb/day)	VOC Emissions (tons/yr)	Benzene Emissions (lb/day)	Benzene Emissions (tons/yr)	Benzene Emissions (grams/sec)	Ethyl Benzene Emissions (lb/day)	Ethyl Benzene Emissions (tons/yr)	Ethyl Benzene Emissions (grams/sec)	Naphthalene Emissions (lb/day)	Naphthalene Emissions (tons/yr)	Naphthalene Emissions (grams/sec)
Gasoline Loading Emissions	1.03E+00	1.88E-01	4.67E-03	8.53E-04	2.46E-05	1.10E-03	2.01E-04	5.78E-06	5.02E-13	9.16E-14	2.64E-15
Gasoline Breathing Emissions	1.64E-01	3.00E-02	7.48E-04	1.37E-04	3.93E-06	1.76E-04	3.21E-05	9.24E-07	8.03E-14	1.47E-14	4.22E-16
Gasoline Refueling Emissions	2.71E+00	4.95E-01	1.23E-02	2.25E-03	6.48E-05	2.90E-03	5.30E-04	1.52E-05	1.33E-12	2.42E-13	6.96E-15
Gasoline Spillage Emissions	1.64E+00	3.00E-01	1.16E-02	2.12E-03	6.11E-05	2.12E-02	3.87E-03	1.11E-04	2.86E-03	5.22E-04	1.50E-05
Gasoline Hose Permeation	6.16E-02	1.13E-02	2.80E-04	5.12E-05	1.47E-06	6.60E-05	1.20E-05	3.47E-07	2.47E-07	4.50E-08	1.30E-09
Total	**5.61E+00**	**1.02E+00**	**2.97E-02**	**5.41E-03**	**1.56E-04**	**2.54E-02**	**4.64E-03**	**1.34E-04**	**2.86E-03**	**5.22E-04**	**1.50E-05**

Reference: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RISK ASSESSMENT PROCEDURES FOR RULES 1401, 1401.1 & 212 Appendix X 2015

Bakersdield Commerce Center

Gasoline Loading Emissions Summary

Assumption: Annual throughput of Gasoline 2,500,000 gal/year

Operational time: 24 hours/day 8760 hours/year

Location	Throughput (gal/yr)	VOC Emission Factor (lb/1000 gal)	VOC Emissions (lb/yr)	VOC Emissions (tons/year)	VOC Emissions (lbs/day)
Service Station	2500000	0.15	3.75E+02	1.88E-01	1.03E+00

Benzene Weight Fraction (%)	Benzene Emissions (lb/yr)	Benzene Emissions (lb/hr)	Benzene Emissions (g/sec)	Benzene Emissions (tons/yr)	Benzene Emissions (lbs/day)
0.455%	1.71E+00	1.95E-04	2.46E-05	8.53E-04	4.67E-03

Ethyl Benzene Weight Fraction (%)	Ethyl Benzene Emissions (lb/yr)	Ethyl Benzene Emissions (lb/hr)	Ethyl Benzene Emissions (g/sec)	Ethyl Benzene Emissions (tons/yr)	Ethyl Benzene Emissions (lbs/day)
0.107%	4.01E-01	4.58E-05	5.78E-06	2.01E-04	1.10E-03

Naphthalene Weight Fraction (%)	Naphthalene Emissions (lb/yr)	Naphthalene Emissions (lb/hr)	Naphthalene Emissions (g/sec)	Naphthalene Emissions (tons/yr)	Naphthalene Emissions (lbs/day)
0.0%	1.83E-10	2.09E-14	2.64E-15	9.16E-14	5.02E-13

Bakersdield Commerce Center

Gasoline Breathing Loss Emissions Summary

Assumption: Annual throughput of Gasoline 2,500,000 gal/year

Operational time: 24 hours/day 8760 hours/year

Location	Throughput (gal/yr)	VOC Emission Factor (lb/1000 gal)	VOC Emissions (lb/yr)	VOC Emissions (tons/year)	VOC Emissions (lbs/day)
Service Station	2500000	0.024	6.00E+01	3.00E-02	1.64E-01

Benzene Weight Fraction (%)	Benzene Emissions (lb/yr)	Benzene Emissions (lb/hr)	Benzene Emissions (g/sec)	Benzene Emissions (tons/yr)	Benzene Emissions (lbs/day)
0.5%	2.73E-01	3.12E-05	3.93E-06	1.37E-04	7.48E-04

Ethyl Benzene Weight Fraction (%)	Ethyl Benzene Emissions (lb/yr)	Ethyl Benzene Emissions (lb/hr)	Ethyl Benzene Emissions (g/sec)	Ethyl Benzene Emissions (tons/yr)	Ethyl Benzene Emissions (lbs/day)
0.107%	6.42E-02	7.33E-06	9.24E-07	3.21E-05	1.76E-04

Naphthalene Weight Fraction (%)	Naphthalene Emissions (lb/yr)	Naphthalene Emissions (lb/hr)	Naphthalene Emissions (g/sec)	Naphthalene Emissions (tons/yr)	Naphthalene Emissions (lbs/day)
0.0%	2.93E-11	3.35E-15	4.22E-16	1.47E-14	8.03E-14

Bakersdield Commerce Center

Gasoline Refueling Emissions Summary

Assumption: Annual throughput of Gasoline 2,500,000 gal/year

Operational time: 24 hours/day 8760 hours/year

Location	Throughput (gal/yr)	VOC Emission Factor (lb/1000 gal)	VOC Emissions (lb/yr)	VOC Emissions (tons/year)	VOC Emissions (lbs/day)
Service Station	2500000	0.396	9.90E+02	4.95E-01	2.71E+00

Benzene Weight Fraction (%)	Benzene Emissions (lb/yr)	Benzene Emissions (lb/hr)	Benzene Emissions (g/sec)	Benzene Emissions (tons/yr)	Benzene Emissions (lbs/day)
0.5%	4.50E+00	5.14E-04	6.48E-05	2.25E-03	1.23E-02

Ethyl Benzene Weight Fraction (%)	Ethyl Benzene Emissions (lb/yr)	Ethyl Benzene Emissions (lb/hr)	Ethyl Benzene Emissions (g/sec)	Ethyl Benzene Emissions (tons/yr)	Ethyl Benzene Emissions (lbs/day)
0.107%	1.06E+00	1.21E-04	1.52E-05	5.30E-04	2.90E-03

Naphthalene Weight Fraction (%)	Naphthalene Emissions (lb/yr)	Naphthalene Emissions (lb/hr)	Naphthalene Emissions (g/sec)	Naphthalene Emissions (tons/yr)	Naphthalene Emissions (lbs/day)
0.0%	4.84E-10	5.52E-14	6.96E-15	2.42E-13	1.33E-12

Bakersdield Commerce Center

Gasoline Spillage Emission Summary

Assumption: Annual throughput of Gasoline 2,500,000 gal/year

Operational time: 24 hours/day 8760 hours/year

Location	Throughput (gal/yr)	VOC Emission Factor (lb/1000 gal)	VOC Emissions (lb/yr)	VOC Emissions (tons/year)	VOC Emissions (lbs/day)
Service Station	2500000	0.24	6.00E+02	3.00E-01	1.64E+00

Benzene Weight Fraction (%)	Benzene Emissions (lb/yr)	Benzene Emissions (lb/hr)	Benzene Emissions (g/sec)	Benzene Emissions (tons/yr)	Benzene Emissions (lbs/day)
0.7%	4.24E+00	4.84E-04	6.11E-05	2.12E-03	1.16E-02

Ethyl Benzene Weight Fraction (%)	Ethyl Benzene Emissions (lb/yr)	Ethyl Benzene Emissions (lb/hr)	Ethyl Benzene Emissions (g/sec)	Ethyl Benzene Emissions (tons/yr)	Ethyl Benzene Emissions (lbs/day)
1.290%	7.74E+00	8.84E-04	1.11E-04	3.87E-03	2.12E-02

Naphthalene Weight Fraction (%)	Naphthalene Emissions (lb/yr)	Naphthalene Emissions (lb/hr)	Naphthalene Emissions (g/sec)	Naphthalene Emissions (tons/yr)	Naphthalene Emissions (lbs/day)
0.17%	1.04E+00	1.19E-04	1.50E-05	5.22E-04	2.86E-03

Bakersdield Commerce Center

Gasoline Hose Permeation Emission Summary

Assumption: Annual throughput of Gasoline 2,500,000 gal/year

Operational time: 24 hours/day 8760 hours/year

Location	Throughput (gal/yr)	VOC Emission Factor (lb/1000 gal)	VOC Emissions (lb/yr)	VOC Emissions (tons/year)	VOC Emissions (lbs/day)
Service Station	2500000	0.009	2.25E+01	1.13E-02	6.16E-02

Benzene Weight Fraction (%)	Benzene Emissions (lb/yr)	Benzene Emissions (lb/hr)	Benzene Emissions (g/sec)	Benzene Emissions (tons/yr)	Benzene Emissions (lbs/day)
0.5%	1.02E-01	1.17E-05	1.47E-06	5.12E-05	2.80E-04

Ethyl Benzene Weight Fraction (%)	Ethyl Benzene Emissions (lb/yr)	Ethyl Benzene Emissions (lb/hr)	Ethyl Benzene Emissions (g/sec)	Ethyl Benzene Emissions (tons/yr)	Ethyl Benzene Emissions (lbs/day)
0.107%	2.41E-02	2.75E-06	3.47E-07	1.20E-05	6.60E-05

Naphthalene Weight Fraction (%)	Naphthalene Emissions (lb/yr)	Naphthalene Emissions (lb/hr)	Naphthalene Emissions (g/sec)	Naphthalene Emissions (tons/yr)	Naphthalene Emissions (lbs/day)
0.00%	9.00E-05	1.03E-08	1.30E-09	4.50E-08	2.47E-07

*** MODELOPTs: NonDFAULT CONC ELEV FASTAREA RURAL ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Allows User-Specified Options:
1. Stack-tip Downwash.
2. Model Accounts for ELEVated Terrain Effects.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Full Conversion Assumed for NO2.

**Other Options Specified:
FASTAREA - Use hybrid approach to optimize AREA sources;
also applies to LINE sources (formerly TOXICS option)
ADJ_U* - Use ADJ_U* option for SBL in AERMET
CCVR_Sub - Meteorological data includes CCVR substitutions
TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: UNITEMIS

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 5 Source(s); 5 Source Group(s); and 71 Receptor(s)

with: 2 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 3 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 18081

**Output Options Selected:
Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 14.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

**Detailed Error/Message File: BakCC_VOC_2022.err
**File for Summary of Results: BakCC_VOC_2022.sum
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/15/19
*** AERMET - VERSION 18081 *** *** VOC from Gasoline sErvice Station with Unit Emissions *** 21:47:59
PAGE 2
*** MODELOPTs: NonDFAULT CONC ELEV FASTAREA RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/15/19
*** AERMET - VERSION 18081 *** *** VOC from Gasoline sErvice Station with Unit Emissions *** 21:47:59
PAGE 3
*** MODELOPTs: NonDFAULT CONC ELEV FASTAREA RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\Arvin_2007-2011.SFC Met Version: 18081
Profile file: ..\Arvin_2007-2011.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 99001 Upper air station no.: 66666
Name: UNKNOWN Name: UNKNOWN
Year: 2007 Year: 2007

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
07	01	01	1	01	-27.9	0.280	-9.000	-9.000	-999.	355.	86.2	0.03	0.72	1.00	4.60	131.	14.0	279.0	2.0
07	01	01	1	02	-31.1	0.312	-9.000	-9.000	-999.	417.	106.8	0.03	0.72	1.00	5.10	128.	14.0	278.8	2.0
07	01	01	1	03	-27.9	0.280	-9.000	-9.000	-999.	356.	86.2	0.03	0.72	1.00	4.60	134.	14.0	278.6	2.0
07	01	01	1	04	-24.8	0.248	-9.000	-9.000	-999.	297.	67.8	0.03	0.72	1.00	4.10	133.	14.0	278.2	2.0
07	01	01	1	05	-21.6	0.216	-9.000	-9.000	-999.	242.	51.5	0.03	0.72	1.00	3.60	133.	14.0	277.9	2.0
07	01	01	1	06	-17.0	0.185	-9.000	-9.000	-999.	191.	37.5	0.03	0.72	1.00	3.10	132.	14.0	277.6	2.0
07	01	01	1	07	-17.0	0.185	-9.000	-9.000	-999.	190.	37.5	0.03	0.72	1.00	3.10	135.	14.0	277.2	2.0
07	01	01	1	08	-7.0	0.122	-9.000	-9.000	-999.	103.	22.9	0.03	0.72	0.59	2.10	133.	14.0	277.0	2.0
07	01	01	1	09	18.5	0.089	0.474	0.005	204.	63.	-3.3	0.02	0.72	0.33	1.00	197.	14.0	278.0	2.0
07	01	01	1	10	58.2	0.130	0.941	0.006	508.	112.	-3.3	0.02	0.72	0.25	1.50	251.	14.0	279.1	2.0
07	01	01	1	11	86.5	0.172	1.180	0.009	673.	171.	-5.2	0.02	0.72	0.22	2.10	264.	14.0	279.9	2.0
07	01	01	1	12	100.8	0.174	1.295	0.010	762.	174.	-4.6	0.02	0.72	0.21	2.10	266.	14.0	280.5	2.0
07	01	01	1	13	100.6	0.195	1.337	0.010	841.	207.	-6.6	0.04	0.72	0.21	2.10	283.	14.0	281.0	2.0
07	01	01	1	14	85.9	0.135	1.300	0.011	904.	120.	-2.5	0.02	0.72	0.22	1.50	269.	14.0	281.5	2.0
07	01	01	1	15	57.3	0.130	1.152	0.012	943.	112.	-3.4	0.02	0.72	0.25	1.50	262.	14.0	281.8	2.0
07	01	01	1	16	17.3	0.117	0.777	0.012	954.	95.	-8.1	0.02	0.72	0.34	1.50	254.	14.0	281.4	2.0
07	01	01	1	17	-1.8	0.068	-9.000	-9.000	-999.	43.	14.9	0.02	0.72	0.61	1.00	211.	14.0	280.4	2.0
07	01	01	1	18	-0.9	0.063	-9.000	-9.000	-999.	38.	23.5	0.03	0.72	1.00	0.50	127.	14.0	279.9	2.0
07	01	01	1	19	-1.1	0.068	-9.000	-9.000	-999.	42.	25.4	0.07	0.72	1.00	0.50	54.	14.0	279.8	2.0
07	01	01	1	20	-2.5	0.079	-9.000	-9.000	-999.	54.	17.3	0.07	0.72	1.00	1.00	37.	14.0	279.6	2.0
07	01	01	1	21	-4.9	0.101	-9.000	-9.000	-999.	77.	18.8	0.07	0.72	1.00	1.50	30.	14.0	279.6	2.0

```
07 01 01   1 22  -10.8  0.153 -9.000 -9.000 -999.  144.    29.6  0.10  0.72  1.00   2.10  22.  14.0  279.8   2.0
07 01 01   1 23  -10.8  0.153 -9.000 -9.000 -999.  144.    29.6  0.10  0.72  1.00   2.10  10.  14.0  279.6   2.0
07 01 01   1 24  -16.8  0.193 -9.000 -9.000 -999.  204.    41.0  0.10  0.72  1.00   2.60  360.  14.0  279.2   2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 07 01 01 01   14.0 1  131.    4.60   279.1   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
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 *** MODELOPTs:    NonDFAULT  CONC  ELEV  FASTAREA  RURAL  ADJ_U*

                          *** THE SUMMARY OF MAXIMUM PERIOD ( 43824 HRS) RESULTS ***


                        ** CONC OF UNITEMIS IN MICROGRAMS/M**3                    **

                                                                    NETWORK
 GROUP ID                AVERAGE CONC             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 BREATHE   1ST HIGHEST VALUE IS      41.46559 AT (  316380.20,  3904474.65,   105.46,   105.46,    0.00)  DC
        2ND HIGHEST VALUE IS      34.37242 AT (  316404.25,  3904473.74,   105.46,   105.46,    0.00)  DC
        3RD HIGHEST VALUE IS      33.86146 AT (  316373.39,  3904453.41,   105.46,   105.46,    0.00)  DC
        4TH HIGHEST VALUE IS      29.04118 AT (  316398.00,  3904452.07,   105.46,   105.46,    0.00)  DC
        5TH HIGHEST VALUE IS      28.05514 AT (  316431.79,  3904473.55,   105.46,   105.46,    0.00)  DC
        6TH HIGHEST VALUE IS      25.19859 AT (  316424.08,  3904453.36,   105.46,   105.46,    0.00)  DC
        7TH HIGHEST VALUE IS      24.16087 AT (  316451.43,  3904471.90,   105.46,   105.46,    0.00)  DC
        8TH HIGHEST VALUE IS      21.51777 AT (  316469.24,  3904472.82,   105.46,   105.46,    0.00)  DC
        9TH HIGHEST VALUE IS      21.29810 AT (  316440.60,  3904443.99,   105.46,   105.46,    0.00)  DC
       10TH HIGHEST VALUE IS      19.37341 AT (  316450.33,  3904438.12,   105.46,   105.46,    0.00)  DC

 HOSE      1ST HIGHEST VALUE IS      41.41409 AT (  316380.20,  3904474.65,   105.46,   105.46,    0.00)  DC
        2ND HIGHEST VALUE IS      34.30205 AT (  316404.25,  3904473.74,   105.46,   105.46,    0.00)  DC
        3RD HIGHEST VALUE IS      33.62044 AT (  316373.39,  3904453.41,   105.46,   105.46,    0.00)  DC
        4TH HIGHEST VALUE IS      28.59196 AT (  316398.00,  3904452.07,   105.46,   105.46,    0.00)  DC
        5TH HIGHEST VALUE IS      28.17328 AT (  316431.79,  3904473.55,   105.46,   105.46,    0.00)  DC
        6TH HIGHEST VALUE IS      24.78787 AT (  316424.08,  3904453.36,   105.46,   105.46,    0.00)  DC
        7TH HIGHEST VALUE IS      24.33899 AT (  316451.43,  3904471.90,   105.46,   105.46,    0.00)  DC
        8TH HIGHEST VALUE IS      21.76963 AT (  316469.24,  3904472.82,   105.46,   105.46,    0.00)  DC
        9TH HIGHEST VALUE IS      20.86214 AT (  316440.60,  3904443.99,   105.46,   105.46,    0.00)  DC
       10TH HIGHEST VALUE IS      18.93272 AT (  316450.33,  3904438.12,   105.46,   105.46,    0.00)  DC

 LOADING   1ST HIGHEST VALUE IS      41.46559 AT (  316380.20,  3904474.65,   105.46,   105.46,    0.00)  DC
        2ND HIGHEST VALUE IS      34.37242 AT (  316404.25,  3904473.74,   105.46,   105.46,    0.00)  DC
        3RD HIGHEST VALUE IS      33.86146 AT (  316373.39,  3904453.41,   105.46,   105.46,    0.00)  DC
        4TH HIGHEST VALUE IS      29.04118 AT (  316398.00,  3904452.07,   105.46,   105.46,    0.00)  DC
        5TH HIGHEST VALUE IS      28.05514 AT (  316431.79,  3904473.55,   105.46,   105.46,    0.00)  DC
        6TH HIGHEST VALUE IS      25.19859 AT (  316424.08,  3904453.36,   105.46,   105.46,    0.00)  DC
        7TH HIGHEST VALUE IS      24.16087 AT (  316451.43,  3904471.90,   105.46,   105.46,    0.00)  DC
        8TH HIGHEST VALUE IS      21.51777 AT (  316469.24,  3904472.82,   105.46,   105.46,    0.00)  DC
        9TH HIGHEST VALUE IS      21.29810 AT (  316440.60,  3904443.99,   105.46,   105.46,    0.00)  DC
       10TH HIGHEST VALUE IS      19.37341 AT (  316450.33,  3904438.12,   105.46,   105.46,    0.00)  DC

 REFUEL    1ST HIGHEST VALUE IS      41.41409 AT (  316380.20,  3904474.65,   105.46,   105.46,    0.00)  DC
        2ND HIGHEST VALUE IS      34.30205 AT (  316404.25,  3904473.74,   105.46,   105.46,    0.00)  DC
        3RD HIGHEST VALUE IS      33.62044 AT (  316373.39,  3904453.41,   105.46,   105.46,    0.00)  DC
        4TH HIGHEST VALUE IS      28.59196 AT (  316398.00,  3904452.07,   105.46,   105.46,    0.00)  DC
        5TH HIGHEST VALUE IS      28.17328 AT (  316431.79,  3904473.55,   105.46,   105.46,    0.00)  DC
        6TH HIGHEST VALUE IS      24.78787 AT (  316424.08,  3904453.36,   105.46,   105.46,    0.00)  DC
        7TH HIGHEST VALUE IS      24.33899 AT (  316451.43,  3904471.90,   105.46,   105.46,    0.00)  DC
        8TH HIGHEST VALUE IS      21.76963 AT (  316469.24,  3904472.82,   105.46,   105.46,    0.00)  DC
        9TH HIGHEST VALUE IS      20.86214 AT (  316440.60,  3904443.99,   105.46,   105.46,    0.00)  DC
       10TH HIGHEST VALUE IS      18.93272 AT (  316450.33,  3904438.12,   105.46,   105.46,    0.00)  DC
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*** MODELOPTs: NonDFAULT CONC ELEV FASTAREA RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43824 HRS) RESULTS ***

** CONC OF UNITEMIS IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
SPILLAGE	1ST HIGHEST VALUE IS	40.45681 AT (316380.20, 3904474.65, 105.46, 105.46, 0.00)	DC	
	2ND HIGHEST VALUE IS	33.54525 AT (316404.25, 3904473.74, 105.46, 105.46, 0.00)	DC	
	3RD HIGHEST VALUE IS	32.82219 AT (316373.39, 3904453.41, 105.46, 105.46, 0.00)	DC	
	4TH HIGHEST VALUE IS	27.95135 AT (316398.00, 3904452.07, 105.46, 105.46, 0.00)	DC	
	5TH HIGHEST VALUE IS	27.74127 AT (316431.79, 3904473.55, 105.46, 105.46, 0.00)	DC	
	6TH HIGHEST VALUE IS	24.20535 AT (316424.08, 3904453.36, 105.46, 105.46, 0.00)	DC	
	7TH HIGHEST VALUE IS	24.07077 AT (316451.43, 3904471.90, 105.46, 105.46, 0.00)	DC	
	8TH HIGHEST VALUE IS	21.61917 AT (316469.24, 3904472.82, 105.46, 105.46, 0.00)	DC	
	9TH HIGHEST VALUE IS	20.37021 AT (316440.60, 3904443.99, 105.46, 105.46, 0.00)	DC	
	10TH HIGHEST VALUE IS	18.48604 AT (316450.33, 3904438.12, 105.46, 105.46, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/15/19
*** AERMET - VERSION 18081 *** *** VOC from Gasoline sErvice Station with Unit Emissions *** 21:47:59

*** MODELOPTs: NonDFAULT CONC ELEV FASTAREA RURAL ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF UNITEMIS IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	NETWORK RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
BREATHE	HIGH 1ST HIGH VALUE IS	1541.58172	ON 09020708: AT (316380.20, 3904474.65, 105.46, 105.46, 0.00)	DC	
HOSE	HIGH 1ST HIGH VALUE IS	2479.97507	ON 09020708: AT (316380.20, 3904474.65, 105.46, 105.46, 0.00)	DC	
LOADING	HIGH 1ST HIGH VALUE IS	1541.58172	ON 09020708: AT (316380.20, 3904474.65, 105.46, 105.46, 0.00)	DC	
REFUEL	HIGH 1ST HIGH VALUE IS	2479.97507	ON 09020708: AT (316380.20, 3904474.65, 105.46, 105.46, 0.00)	DC	
SPILLAGE	HIGH 1ST HIGH VALUE IS	3041.88252	ON 09012121: AT (316380.20, 3904474.65, 105.46, 105.46, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
♀ *** AERMOD - VERSION 18081 *** *** Bakersfield Commerce Center *** 10/15/19
*** AERMET - VERSION 18081 *** *** VOC from Gasoline sErvice Station with Unit Emissions *** 21:47:59

*** MODELOPTs: NonDFAULT CONC ELEV FASTAREA RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 449 Informational Message(s)

A Total of 43824 Hours Were Processed

A Total of 449 Calm Hours Identified

A Total of 0 Missing Hours Identified (0.00 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
ME W187 79 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

*HARP - HRACalc v19044 10/18/2019 2:40:21 PM - Cancer Risk - Input File: C:\temp\BAK Truck Stop\HARP2\BAKERSFIELD COMMERCE CENTER\hra\bakccHRAInput.hra

REC	GRP	NETID	X	Y	CONC	POLID	POLABBRE	RISK_SUM	SCENARIO	DETAILS	INH_RISK	1ST_DRIVE	2ND_DRIVER	
1	ALL		316513.8	3904395	0.001699	71432	Benzene	1.52E-07	70YrCance	*	1.52E-07	INHALATION	Max	1.48E-05
2	ALL		316543.8	3904395	0.001519	71432	Benzene	1.36E-07	70YrCance	*	1.36E-07	INHALATION		
3	ALL		316513.8	3904410	0.001858	71432	Benzene	1.67E-07	70YrCance	*	1.67E-07	INHALATION	All Other Pathways = 0.00	
4	ALL		316543.8	3904410	0.001644	71432	Benzene	1.47E-07	70YrCance	*	1.47E-07	INHALATION		
5	ALL		316513.8	3904425	0.002028	71432	Benzene	1.82E-07	70YrCance	*	1.82E-07	INHALATION		
6	ALL		316518.8	3904425	0.001983	71432	Benzene	1.78E-07	70YrCance	*	1.78E-07	INHALATION		
7	ALL		316543.5	3904423	0.001756	71432	Benzene	1.57E-07	70YrCance	*	1.57E-07	INHALATION		
8	ALL		316516.4	3904438	0.002158	71432	Benzene	1.93E-07	70YrCance	*	1.93E-07	INHALATION		
9	ALL		316543.8	3904439	0.001886	71432	Benzene	1.69E-07	70YrCance	*	1.69E-07	INHALATION		
10	ALL		316517.2	3904448	0.002258	71432	Benzene	2.02E-07	70YrCance	*	2.02E-07	INHALATION		
11	ALL		316517.4	3904460	0.002376	71432	Benzene	2.13E-07	70YrCance	*	2.13E-07	INHALATION		
12	ALL		316543.7	3904453	0.002005	71432	Benzene	1.80E-07	70YrCance	*	1.80E-07	INHALATION		
13	ALL		316543.8	3904467	0.002103	71432	Benzene	1.88E-07	70YrCance	*	1.88E-07	INHALATION		
14	ALL		316517.4	3904470	0.002474	71432	Benzene	2.22E-07	70YrCance	*	2.22E-07	INHALATION		
15	ALL		316517.4	3904480	0.002564	71432	Benzene	2.30E-07	70YrCance	*	2.30E-07	INHALATION		
16	ALL		316543.5	3904481	0.002195	71432	Benzene	1.97E-07	70YrCance	*	1.97E-07	INHALATION		
17	ALL		316584.8	3904480	0.001736	71432	Benzene	1.56E-07	70YrCance	*	1.56E-07	INHALATION		
18	ALL		316583.9	3904468	0.001698	71432	Benzene	1.52E-07	70YrCance	*	1.52E-07	INHALATION		
19	ALL		316583.1	3904454	0.001643	71432	Benzene	1.47E-07	70YrCance	*	1.47E-07	INHALATION		
20	ALL		316583.6	3904439	0.001568	71432	Benzene	1.41E-07	70YrCance	*	1.41E-07	INHALATION		
21	ALL		316582.8	3904425	0.001497	71432	Benzene	1.34E-07	70YrCance	*	1.34E-07	INHALATION		
22	ALL		316583.4	3904412	0.001416	71432	Benzene	1.27E-07	70YrCance	*	1.27E-07	INHALATION		
23	ALL		316583.9	3904398	0.001333	71432	Benzene	1.19E-07	70YrCance	*	1.19E-07	INHALATION		
24	ALL		316611.2	3904464	0.00147	71432	Benzene	1.32E-07	70YrCance	*	1.32E-07	INHALATION		
25	ALL		316610.7	3904445	0.001409	71432	Benzene	1.26E-07	70YrCance	*	1.26E-07	INHALATION		
26	ALL		316611.8	3904432	0.001349	71432	Benzene	1.21E-07	70YrCance	*	1.21E-07	INHALATION		
27	ALL		316609.5	3904416	0.001297	71432	Benzene	1.16E-07	70YrCance	*	1.16E-07	INHALATION		
28	ALL		316608.5	3904402	0.001238	71432	Benzene	1.11E-07	70YrCance	*	1.11E-07	INHALATION		
29	ALL		316629.7	3904478	0.001379	71432	Benzene	1.24E-07	70YrCance	*	1.24E-07	INHALATION		
30	ALL		316642.4	3904478	0.0013	71432	Benzene	1.17E-07	70YrCance	*	1.17E-07	INHALATION		
31	ALL		316657.4	3904479	0.001216	71432	Benzene	1.09E-07	70YrCance	*	1.09E-07	INHALATION		
32	ALL		316673	3904478	0.001133	71432	Benzene	1.02E-07	70YrCance	*	1.02E-07	INHALATION		
33	ALL		316644.6	3904447	0.00122	71432	Benzene	1.09E-07	70YrCance	*	1.09E-07	INHALATION		
34	ALL		316669.2	3904447	0.001101	71432	Benzene	9.87E-08	70YrCance	*	9.87E-08	INHALATION		
35	ALL		316644.1	3904432	0.001182	71432	Benzene	1.06E-07	70YrCance	*	1.06E-07	INHALATION		
36	ALL		316644.6	3904418	0.001136	71432	Benzene	1.02E-07	70YrCance	*	1.02E-07	INHALATION		
37	ALL		316669.7	3904430	0.001062	71432	Benzene	9.52E-08	70YrCance	*	9.52E-08	INHALATION		
38	ALL		316645.5	3904402	0.001079	71432	Benzene	9.67E-08	70YrCance	*	9.67E-08	INHALATION		
39	ALL		316668.9	3904402	0.000992	71432	Benzene	8.89E-08	70YrCance	*	8.89E-08	INHALATION		
40	ALL		316485	3904428	0.002363	71432	Benzene	2.12E-07	70YrCance	*	2.12E-07	INHALATION		
41	ALL		316483.2	3904406	0.002058	71432	Benzene	1.84E-07	70YrCance	*	1.84E-07	INHALATION		
42	ALL		316450.3	3904438	0.003026	71432	Benzene	2.71E-07	70YrCance	*	2.71E-07	INHALATION		
43	ALL		316448.1	3904404	0.002345	71432	Benzene	2.10E-07	70YrCance	*	2.10E-07	INHALATION		
44	ALL		316398	3904452	0.00466	71432	Benzene	4.18E-07	70YrCance	*	4.18E-07	INHALATION		
45	ALL		316440.6	3904444	0.003346	71432	Benzene	3.00E-07	70YrCance	*	3.00E-07	INHALATION		
46	ALL		316380.2	3904475	0.006832	71432	Benzene	6.12E-07	70YrCance	*	6.12E-07	INHALATION		
47	ALL		316431.8	3904474	0.004501	71432	Benzene	4.03E-07	70YrCance	*	4.03E-07	INHALATION		
48	ALL		316451.4	3904472	0.003857	71432	Benzene	3.46E-07	70YrCance	*	3.46E-07	INHALATION		
49	ALL		316404.3	3904474	0.005567	71432	Benzene	4.99E-07	70YrCance	*	4.99E-07	INHALATION		
50	ALL		316424.1	3904453	0.004	71432	Benzene	3.58E-07	70YrCance	*	3.58E-07	INHALATION		
51	ALL		316469.2	3904473	0.003426	71432	Benzene	3.07E-07	70YrCance	*	3.07E-07	INHALATION		
52	ALL		316495.5	3904472	0.002861	71432	Benzene	2.56E-07	70YrCance	*	2.56E-07	INHALATION		
53	ALL		316450.2	3904421	0.002651	71432	Benzene	2.38E-07	70YrCance	*	2.38E-07	INHALATION		
54	ALL		316373.4	3904453	0.005562	71432	Benzene	4.98E-07	70YrCance	*	4.98E-07	INHALATION		
55	ALL		316284.4	3904921	0.001903	71432	Benzene	1.71E-07	70YrCance	*	1.71E-07	INHALATION		
56	ALL		316317.9	3904920	0.001821	71432	Benzene	1.63E-07	70YrCance	*	1.63E-07	INHALATION		
57	ALL		316362.2	3904917	0.001688	71432	Benzene	1.51E-07	70YrCance	*	1.51E-07	INHALATION		
58	ALL		316389	3904916	0.001621	71432	Benzene	1.45E-07	70YrCance	*	1.45E-07	INHALATION		
59	ALL		316438.7	3904910	0.001423	71432	Benzene	1.28E-07	70YrCance	*	1.28E-07	INHALATION		
60	ALL		316465.5	3904911	0.001299	71432	Benzene	1.16E-07	70YrCance	*	1.16E-07	INHALATION		
61	ALL		316414.3	3904915	0.00152	71432	Benzene	1.36E-07	70YrCance	*	1.36E-07	INHALATION		
62	ALL		316494.2	3904910	0.001194	71432	Benzene	1.07E-07	70YrCance	*	1.07E-07	INHALATION		
63	ALL		316515.6	3904909	0.001123	71432	Benzene	1.01E-07	70YrCance	*	1.01E-07	INHALATION		
64	ALL		316539.9	3904910	0.00104	71432	Benzene	9.32E-08	70YrCance	*	9.32E-08	INHALATION		
65	ALL		316564.8	3904910	0.00097	71432	Benzene	8.69E-08	70YrCance	*	8.69E-08	INHALATION		
66	ALL		316589.1	3904908	0.000914	71432	Benzene	8.19E-08	70YrCance	*	8.19E-08	INHALATION		
67	ALL		316614.4	3904910	0.000852	71432	Benzene	7.64E-08	70YrCance	*	7.64E-08	INHALATION		
68	ALL		316645.1	3904908	0.000785	71432	Benzene	7.04E-08	70YrCance	*	7.04E-08	INHALATION		
69	ALL		316668	3904905	0.000738	71432	Benzene	6.61E-08	70YrCance	*	6.61E-08	INHALATION		
70	ALL		316691.8	3904906	0.000685	71432	Benzene	6.14E-08	70YrCance	*	6.14E-08	INHALATION		
71	ALL		316721	3904904	0.00063	71432	Benzene	5.65E-08	70YrCance	*	5.65E-08	INHALATION		
1	ALL		316513.8	3904395	0.001438	100414	Ethyl Benz	1.12E-08	70YrCance	*	1.12E-08	INHALATION		
2	ALL		316543.8	3904395	0.001291	100414	Ethyl Benz	1.01E-08	70YrCance	*	1.01E-08	INHALATION		
3	ALL		316513.8	3904410	0.001579	100414	Ethyl Benz	1.23E-08	70YrCance	*	1.23E-08	INHALATION		
4	ALL		316543.8	3904410	0.001405	100414	Ethyl Benz	1.10E-08	70YrCance	*	1.10E-08	INHALATION		
5	ALL		316513.8	3904425	0.001735	100414	Ethyl Benz	1.35E-08	70YrCance	*	1.35E-08	INHALATION		
6	ALL		316518.8	3904425	0.001698	100414	Ethyl Benz	1.32E-08	70YrCance	*	1.32E-08	INHALATION		

7	ALL	316543.5	3904423	0.001508	100414	Ethyl Benz	1.18E-08	70YrCance	*	1.18E-08	INHALATION
8	ALL	316516.4	3904438	0.001858	100414	Ethyl Benz	1.45E-08	70YrCance	*	1.45E-08	INHALATION
9	ALL	316543.8	3904439	0.001629	100414	Ethyl Benz	1.27E-08	70YrCance	*	1.27E-08	INHALATION
10	ALL	316517.2	3904448	0.001951	100414	Ethyl Benz	1.52E-08	70YrCance	*	1.52E-08	INHALATION
11	ALL	316517.4	3904460	0.002059	100414	Ethyl Benz	1.61E-08	70YrCance	*	1.61E-08	INHALATION
12	ALL	316543.7	3904453	0.001738	100414	Ethyl Benz	1.36E-08	70YrCance	*	1.36E-08	INHALATION
13	ALL	316543.8	3904467	0.001827	100414	Ethyl Benz	1.42E-08	70YrCance	*	1.42E-08	INHALATION
14	ALL	316517.4	3904470	0.002149	100414	Ethyl Benz	1.68E-08	70YrCance	*	1.68E-08	INHALATION
15	ALL	316517.4	3904480	0.002231	100414	Ethyl Benz	1.74E-08	70YrCance	*	1.74E-08	INHALATION
16	ALL	316543.5	3904481	0.001911	100414	Ethyl Benz	1.49E-08	70YrCance	*	1.49E-08	INHALATION
17	ALL	316584.8	3904480	0.001511	100414	Ethyl Benz	1.18E-08	70YrCance	*	1.18E-08	INHALATION
18	ALL	316583.9	3904468	0.001476	100414	Ethyl Benz	1.15E-08	70YrCance	*	1.15E-08	INHALATION
19	ALL	316583.1	3904454	0.001425	100414	Ethyl Benz	1.11E-08	70YrCance	*	1.11E-08	INHALATION
20	ALL	316583.6	3904439	0.001357	100414	Ethyl Benz	1.06E-08	70YrCance	*	1.06E-08	INHALATION
21	ALL	316582.8	3904425	0.001292	100414	Ethyl Benz	1.01E-08	70YrCance	*	1.01E-08	INHALATION
22	ALL	316583.4	3904412	0.001218	100414	Ethyl Benz	9.50E-09	70YrCance	*	9.50E-09	INHALATION
23	ALL	316583.9	3904398	0.001141	100414	Ethyl Benz	8.90E-09	70YrCance	*	8.90E-09	INHALATION
24	ALL	316611.2	3904464	0.001278	100414	Ethyl Benz	9.96E-09	70YrCance	*	9.96E-09	INHALATION
25	ALL	316610.7	3904445	0.001222	100414	Ethyl Benz	9.53E-09	70YrCance	*	9.53E-09	INHALATION
26	ALL	316611.8	3904432	0.001167	100414	Ethyl Benz	9.10E-09	70YrCance	*	9.10E-09	INHALATION
27	ALL	316609.5	3904416	0.001119	100414	Ethyl Benz	8.73E-09	70YrCance	*	8.73E-09	INHALATION
28	ALL	316608.5	3904402	0.001064	100414	Ethyl Benz	8.30E-09	70YrCance	*	8.30E-09	INHALATION
29	ALL	316629.7	3904478	0.001199	100414	Ethyl Benz	9.35E-09	70YrCance	*	9.35E-09	INHALATION
30	ALL	316642.4	3904478	0.00113	100414	Ethyl Benz	8.81E-09	70YrCance	*	8.81E-09	INHALATION
31	ALL	316657.4	3904479	0.001056	100414	Ethyl Benz	8.23E-09	70YrCance	*	8.23E-09	INHALATION
32	ALL	316673	3904478	0.000984	100414	Ethyl Benz	7.67E-09	70YrCance	*	7.67E-09	INHALATION
33	ALL	316644.6	3904447	0.001059	100414	Ethyl Benz	8.26E-09	70YrCance	*	8.26E-09	INHALATION
34	ALL	316669.2	3904447	0.000955	100414	Ethyl Benz	7.45E-09	70YrCance	*	7.45E-09	INHALATION
35	ALL	316644.1	3904432	0.001023	100414	Ethyl Benz	7.98E-09	70YrCance	*	7.98E-09	INHALATION
36	ALL	316644.6	3904418	0.000981	100414	Ethyl Benz	7.65E-09	70YrCance	*	7.65E-09	INHALATION
37	ALL	316669.7	3904430	0.000919	100414	Ethyl Benz	7.17E-09	70YrCance	*	7.17E-09	INHALATION
38	ALL	316645.5	3904402	0.00093	100414	Ethyl Benz	7.25E-09	70YrCance	*	7.25E-09	INHALATION
39	ALL	316668.9	3904402	0.000856	100414	Ethyl Benz	6.67E-09	70YrCance	*	6.67E-09	INHALATION
40	ALL	316485	3904428	0.002013	100414	Ethyl Benz	1.57E-08	70YrCance	*	1.57E-08	INHALATION
41	ALL	316483.2	3904406	0.001742	100414	Ethyl Benz	1.36E-08	70YrCance	*	1.36E-08	INHALATION
42	ALL	316450.3	3904438	0.002575	100414	Ethyl Benz	2.01E-08	70YrCance	*	2.01E-08	INHALATION
43	ALL	316448.1	3904404	0.001978	100414	Ethyl Benz	1.54E-08	70YrCance	*	1.54E-08	INHALATION
44	ALL	316398	3904452	0.00396	100414	Ethyl Benz	3.09E-08	70YrCance	*	3.09E-08	INHALATION
45	ALL	316440.6	3904444	0.002849	100414	Ethyl Benz	2.22E-08	70YrCance	*	2.22E-08	INHALATION
46	ALL	316380.2	3904475	0.005845	100414	Ethyl Benz	4.56E-08	70YrCance	*	4.56E-08	INHALATION
47	ALL	316431.8	3904474	0.003883	100414	Ethyl Benz	3.03E-08	70YrCance	*	3.03E-08	INHALATION
48	ALL	316451.4	3904472	0.003336	100414	Ethyl Benz	2.60E-08	70YrCance	*	2.60E-08	INHALATION
49	ALL	316404.3	3904474	0.004778	100414	Ethyl Benz	3.73E-08	70YrCance	*	3.73E-08	INHALATION
50	ALL	316424.1	3904453	0.003411	100414	Ethyl Benz	2.66E-08	70YrCance	*	2.66E-08	INHALATION
51	ALL	316469.2	3904473	0.00297	100414	Ethyl Benz	2.32E-08	70YrCance	*	2.32E-08	INHALATION
52	ALL	316495.5	3904472	0.002484	100414	Ethyl Benz	1.94E-08	70YrCance	*	1.94E-08	INHALATION
53	ALL	316450.2	3904421	0.002244	100414	Ethyl Benz	1.75E-08	70YrCance	*	1.75E-08	INHALATION
54	ALL	316373.4	3904453	0.004718	100414	Ethyl Benz	3.68E-08	70YrCance	*	3.68E-08	INHALATION
55	ALL	316284.4	3904921	0.001628	100414	Ethyl Benz	1.27E-08	70YrCance	*	1.27E-08	INHALATION
56	ALL	316317.9	3904920	0.001549	100414	Ethyl Benz	1.21E-08	70YrCance	*	1.21E-08	INHALATION
57	ALL	316362.2	3904917	0.001428	100414	Ethyl Benz	1.11E-08	70YrCance	*	1.11E-08	INHALATION
58	ALL	316389	3904916	0.00138	100414	Ethyl Benz	1.08E-08	70YrCance	*	1.08E-08	INHALATION
59	ALL	316438.7	3904910	0.001206	100414	Ethyl Benz	9.40E-09	70YrCance	*	9.40E-09	INHALATION
60	ALL	316465.5	3904911	0.0011	100414	Ethyl Benz	8.58E-09	70YrCance	*	8.58E-09	INHALATION
61	ALL	316414.3	3904915	0.001295	100414	Ethyl Benz	1.01E-08	70YrCance	*	1.01E-08	INHALATION
62	ALL	316494.2	3904910	0.001013	100414	Ethyl Benz	7.90E-09	70YrCance	*	7.90E-09	INHALATION
63	ALL	316515.6	3904909	0.00095	100414	Ethyl Benz	7.41E-09	70YrCance	*	7.41E-09	INHALATION
64	ALL	316539.9	3904910	0.000877	100414	Ethyl Benz	6.84E-09	70YrCance	*	6.84E-09	INHALATION
65	ALL	316564.8	3904910	0.000817	100414	Ethyl Benz	6.37E-09	70YrCance	*	6.37E-09	INHALATION
66	ALL	316589.1	3904908	0.000771	100414	Ethyl Benz	6.01E-09	70YrCance	*	6.01E-09	INHALATION
67	ALL	316614.4	3904910	0.000721	100414	Ethyl Benz	5.62E-09	70YrCance	*	5.62E-09	INHALATION
68	ALL	316645.1	3904908	0.000665	100414	Ethyl Benz	5.19E-09	70YrCance	*	5.19E-09	INHALATION
69	ALL	316668	3904905	0.000623	100414	Ethyl Benz	4.86E-09	70YrCance	*	4.86E-09	INHALATION
70	ALL	316691.8	3904906	0.000577	100414	Ethyl Benz	4.50E-09	70YrCance	*	4.50E-09	INHALATION
71	ALL	316721	3904904	0.00053	100414	Ethyl Benz	4.13E-09	70YrCance	*	4.13E-09	INHALATION
1	ALL	316513.8	3904395	0.000161	91203	Naphthale	1.73E-08	70YrCance	*	1.73E-08	INHALATION
2	ALL	316543.8	3904395	0.000145	91203	Naphthale	1.56E-08	70YrCance	*	1.56E-08	INHALATION
3	ALL	316513.8	3904410	0.000177	91203	Naphthale	1.90E-08	70YrCance	*	1.90E-08	INHALATION
4	ALL	316543.8	3904410	0.000158	91203	Naphthale	1.70E-08	70YrCance	*	1.70E-08	INHALATION
5	ALL	316513.8	3904425	0.000195	91203	Naphthale	2.10E-08	70YrCance	*	2.10E-08	INHALATION
6	ALL	316518.8	3904425	0.000191	91203	Naphthale	2.05E-08	70YrCance	*	2.05E-08	INHALATION
7	ALL	316543.5	3904423	0.00017	91203	Naphthale	1.83E-08	70YrCance	*	1.83E-08	INHALATION
8	ALL	316516.4	3904438	0.00021	91203	Naphthale	2.26E-08	70YrCance	*	2.26E-08	INHALATION
9	ALL	316543.8	3904439	0.000184	91203	Naphthale	1.98E-08	70YrCance	*	1.98E-08	INHALATION
10	ALL	316517.2	3904448	0.000221	91203	Naphthale	2.38E-08	70YrCance	*	2.38E-08	INHALATION
11	ALL	316517.4	3904460	0.000233	91203	Naphthale	2.51E-08	70YrCance	*	2.51E-08	INHALATION
12	ALL	316543.7	3904453	0.000197	91203	Naphthale	2.12E-08	70YrCance	*	2.12E-08	INHALATION
13	ALL	316543.8	3904467	0.000207	91203	Naphthale	2.23E-08	70YrCance	*	2.23E-08	INHALATION
14	ALL	316517.4	3904470	0.000243	91203	Naphthale	2.61E-08	70YrCance	*	2.61E-08	INHALATION

15	ALL	316517.4	3904480	0.000253	91203	Naphthale	2.72E-08	70YrCance	*	2.72E-08	INHALATION
16	ALL	316543.5	3904481	0.000217	91203	Naphthale	2.33E-08	70YrCance	*	2.33E-08	INHALATION
17	ALL	316584.8	3904480	0.000171	91203	Naphthale	1.84E-08	70YrCance	*	1.84E-08	INHALATION
18	ALL	316583.9	3904468	0.000167	91203	Naphthale	1.80E-08	70YrCance	*	1.80E-08	INHALATION
19	ALL	316583.1	3904454	0.000161	91203	Naphthale	1.73E-08	70YrCance	*	1.73E-08	INHALATION
20	ALL	316583.6	3904439	0.000154	91203	Naphthale	1.66E-08	70YrCance	*	1.66E-08	INHALATION
21	ALL	316582.8	3904425	0.000146	91203	Naphthale	1.57E-08	70YrCance	*	1.57E-08	INHALATION
22	ALL	316583.4	3904412	0.000137	91203	Naphthale	1.47E-08	70YrCance	*	1.47E-08	INHALATION
23	ALL	316583.9	3904398	0.000129	91203	Naphthale	1.39E-08	70YrCance	*	1.39E-08	INHALATION
24	ALL	316611.2	3904464	0.000145	91203	Naphthale	1.56E-08	70YrCance	*	1.56E-08	INHALATION
25	ALL	316610.7	3904445	0.000138	91203	Naphthale	1.48E-08	70YrCance	*	1.48E-08	INHALATION
26	ALL	316611.8	3904432	0.000132	91203	Naphthale	1.42E-08	70YrCance	*	1.42E-08	INHALATION
27	ALL	316609.5	3904416	0.000126	91203	Naphthale	1.36E-08	70YrCance	*	1.36E-08	INHALATION
28	ALL	316608.5	3904402	0.00012	91203	Naphthale	1.29E-08	70YrCance	*	1.29E-08	INHALATION
29	ALL	316629.7	3904478	0.000136	91203	Naphthale	1.46E-08	70YrCance	*	1.46E-08	INHALATION
30	ALL	316642.4	3904478	0.000128	91203	Naphthale	1.38E-08	70YrCance	*	1.38E-08	INHALATION
31	ALL	316657.4	3904479	0.00012	91203	Naphthale	1.29E-08	70YrCance	*	1.29E-08	INHALATION
32	ALL	316673	3904478	0.000111	91203	Naphthale	1.19E-08	70YrCance	*	1.19E-08	INHALATION
33	ALL	316644.6	3904447	0.00012	91203	Naphthale	1.29E-08	70YrCance	*	1.29E-08	INHALATION
34	ALL	316669.2	3904447	0.000108	91203	Naphthale	1.16E-08	70YrCance	*	1.16E-08	INHALATION
35	ALL	316644.1	3904432	0.000116	91203	Naphthale	1.25E-08	70YrCance	*	1.25E-08	INHALATION
36	ALL	316644.6	3904418	0.000111	91203	Naphthale	1.19E-08	70YrCance	*	1.19E-08	INHALATION
37	ALL	316669.7	3904430	0.000104	91203	Naphthale	1.12E-08	70YrCance	*	1.12E-08	INHALATION
38	ALL	316645.5	3904402	0.000105	91203	Naphthale	1.13E-08	70YrCance	*	1.13E-08	INHALATION
39	ALL	316668.9	3904402	9.70E-05	91203	Naphthale	1.04E-08	70YrCance	*	1.04E-08	INHALATION
40	ALL	316485	3904428	0.000226	91203	Naphthale	2.43E-08	70YrCance	*	2.43E-08	INHALATION
41	ALL	316483.2	3904406	0.000195	91203	Naphthale	2.10E-08	70YrCance	*	2.10E-08	INHALATION
42	ALL	316450.3	3904438	0.000289	91203	Naphthale	3.11E-08	70YrCance	*	3.11E-08	INHALATION
43	ALL	316448.1	3904404	0.000222	91203	Naphthale	2.39E-08	70YrCance	*	2.39E-08	INHALATION
44	ALL	316398	3904452	0.000445	91203	Naphthale	4.79E-08	70YrCance	*	4.79E-08	INHALATION
45	ALL	316440.6	3904444	0.00032	91203	Naphthale	3.44E-08	70YrCance	*	3.44E-08	INHALATION
46	ALL	316380.2	3904475	0.000658	91203	Naphthale	7.08E-08	70YrCance	*	7.08E-08	INHALATION
47	ALL	316431.8	3904474	0.000439	91203	Naphthale	4.72E-08	70YrCance	*	4.72E-08	INHALATION
48	ALL	316451.4	3904472	0.000377	91203	Naphthale	4.05E-08	70YrCance	*	4.05E-08	INHALATION
49	ALL	316404.3	3904474	0.000539	91203	Naphthale	5.80E-08	70YrCance	*	5.80E-08	INHALATION
50	ALL	316424.1	3904453	0.000384	91203	Naphthale	4.13E-08	70YrCance	*	4.13E-08	INHALATION
51	ALL	316469.2	3904473	0.000336	91203	Naphthale	3.61E-08	70YrCance	*	3.61E-08	INHALATION
52	ALL	316495.5	3904472	0.000281	91203	Naphthale	3.02E-08	70YrCance	*	3.02E-08	INHALATION
53	ALL	316450.2	3904421	0.000252	91203	Naphthale	2.71E-08	70YrCance	*	2.71E-08	INHALATION
54	ALL	316373.4	3904453	0.00053	91203	Naphthale	5.70E-08	70YrCance	*	5.70E-08	INHALATION
55	ALL	316284.4	3904921	0.000183	91203	Naphthale	1.97E-08	70YrCance	*	1.97E-08	INHALATION
56	ALL	316317.9	3904920	0.000174	91203	Naphthale	1.87E-08	70YrCance	*	1.87E-08	INHALATION
57	ALL	316362.2	3904917	0.00016	91203	Naphthale	1.72E-08	70YrCance	*	1.72E-08	INHALATION
58	ALL	316389	3904916	0.000155	91203	Naphthale	1.67E-08	70YrCance	*	1.67E-08	INHALATION
59	ALL	316438.7	3904910	0.000135	91203	Naphthale	1.45E-08	70YrCance	*	1.45E-08	INHALATION
60	ALL	316465.5	3904911	0.000123	91203	Naphthale	1.32E-08	70YrCance	*	1.32E-08	INHALATION
61	ALL	316414.3	3904915	0.000146	91203	Naphthale	1.57E-08	70YrCance	*	1.57E-08	INHALATION
62	ALL	316494.2	3904910	0.000114	91203	Naphthale	1.23E-08	70YrCance	*	1.23E-08	INHALATION
63	ALL	316515.6	3904909	0.000107	91203	Naphthale	1.15E-08	70YrCance	*	1.15E-08	INHALATION
64	ALL	316539.9	3904910	9.80E-05	91203	Naphthale	1.05E-08	70YrCance	*	1.05E-08	INHALATION
65	ALL	316564.8	3904910	9.10E-05	91203	Naphthale	9.79E-09	70YrCance	*	9.79E-09	INHALATION
66	ALL	316589.1	3904908	8.60E-05	91203	Naphthale	9.25E-09	70YrCance	*	9.25E-09	INHALATION
67	ALL	316614.4	3904910	8.10E-05	91203	Naphthale	8.71E-09	70YrCance	*	8.71E-09	INHALATION
68	ALL	316645.1	3904908	7.50E-05	91203	Naphthale	8.07E-09	70YrCance	*	8.07E-09	INHALATION
69	ALL	316668	3904905	7.00E-05	91203	Naphthale	7.53E-09	70YrCance	*	7.53E-09	INHALATION
70	ALL	316691.8	3904906	6.50E-05	91203	Naphthale	6.99E-09	70YrCance	*	6.99E-09	INHALATION
71	ALL	316721	3904904	5.90E-05	91203	Naphthale	6.35E-09	70YrCance	*	6.35E-09	INHALATION
1	ALL	316513.8	3904395	0.00627	9901	DieselExhP	6.18E-06	70YrCance	*	6.18E-06	INHALATION
2	ALL	316543.8	3904395	0.00613	9901	DieselExhP	6.04E-06	70YrCance	*	6.04E-06	INHALATION
3	ALL	316513.8	3904410	0.00695	9901	DieselExhP	6.85E-06	70YrCance	*	6.85E-06	INHALATION
4	ALL	316543.8	3904410	0.00678	9901	DieselExhP	6.68E-06	70YrCance	*	6.68E-06	INHALATION
5	ALL	316513.8	3904425	0.00782	9901	DieselExhP	7.71E-06	70YrCance	*	7.71E-06	INHALATION
6	ALL	316518.8	3904425	0.00779	9901	DieselExhP	7.68E-06	70YrCance	*	7.68E-06	INHALATION
7	ALL	316543.5	3904423	0.00746	9901	DieselExhP	7.35E-06	70YrCance	*	7.35E-06	INHALATION
8	ALL	316516.4	3904438	0.00879	9901	DieselExhP	8.67E-06	70YrCance	*	8.67E-06	INHALATION
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HARP Project Summary Report 10/18/2019 2:40:29 PM

PROJECT INFORMATION
HARP Version: 19044
Project Name: BAKERSFIELD COMMERCE CENTER
Project Output Directory: C:\temp\BAK Truck Stop\HARP2\BAKERSFIELD COMMERCE CENTER
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:0
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH18232
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
71432	Benzene	0.1	27	3	3		
100414	Ethyl Benzene	0.0087			2000		
91203	Naphthalene	0.12		9			
9901	DieselExhPM	1.1		5			

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list

LIST OF RISK ASSESSMENT FILES

Health risk analysis files (\hra\)

bakccCancerRisk.csv
bakccCancerRiskSumByRec.csv
bakccGLCList.csv
bakccHRAInput.hra
bakccNCAcuteRisk.csv
bakccNCAcuteRiskSumByRec.csv
bakccNCChronicRisk.csv
bakccNCChronicRiskSumByRec.csv
bakccOutput.txt
bakccPathwayRec.csv
bakccPolDB.csv

Spatial averaging files (\sa\)

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BIOLOGICAL ANALYSIS REPORT

ELMER F. KARPE DEVELOPMENT, INC.

KARPE DEVELOPMENT PROJECT
GPA/ZC 19-0292



OCTOBER 2019

BIOLOGICAL ANALYSIS REPORT

KARPE DEVELOPMENT PROJECT
GPA/ZC 19-0292

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October 2019

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Project #190316

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ACRONYMS AND ABBREVIATIONS

BAR	Biological Analysis Report
BIOS	Biogeography Information and Observation System
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWHR	California Wildlife Habitat Relationships
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
gal	Gallon
MBGP	Metropolitan Bakersfield General Plan
MBHCP	Metropolitan of Bakersfield Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

The proposed Karpe Development Project (Project) is the construction of a truck stop to service motorists and professional truck drivers associated with traffic from State Route (SR) 99. The Project is located on approximately 18 acres of previously disturbed lands within the City of Bakersfield, Kern County, California. As proposed, the Project will develop a convenience store with attached fast food establishment, fueling stations, an automotive maintenance building, truck scales, storm water retention basin, and other associated infrastructure. The Project will require a General Plan Amendment and Zone Change from the City of Bakersfield Planning Division (City), Case Number GPA/ZC 19-0292.

This Biological Analysis Report (BAR) provides information about the natural resources currently existing on and surrounding the Project site, which could influence the decision-making process. Information on sensitive natural communities and special-status plant and wildlife species that are known or have potential to occur on the Project site and nearby areas is based upon available database research and data collected during an on-site field survey. This BAR is designed to support evaluation of the Project pursuant to the California Environmental Quality Act (CEQA), project permitting through regulatory agencies, and other related uses. As lead agency, the City will use this BAR to support the preparation of an Initial Study to determine the impacts of the Project. The Project is within the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and associated State Incidental Take Permit (ITP) area, thus specific surveys for selected federal and State listed species covered by that plan and ITP must be conducted and associated protection measures must be implemented. Those are identified in this BAR where appropriate.

Reviews of agency-maintained databases were conducted to determine the potential presence of sensitive biological resources and special-status species. The results indicated that 15 special-status plant species and 30 special-status wildlife species have the potential to occur within the vicinity of the Project. A reconnaissance-level field survey was conducted to identify sensitive biological resources on-site and to document the suitability of the habitat on the Project to support special-status species. No sensitive natural plant communities occur on the Project. No special-status plant species were observed on the Project site. One special-status wildlife species was identified on the site; San Joaquin kit fox (*Vulpes macrotis mutica*).

Reviews of the databases and the site visit confirmed that there are no defined waters or wetlands on or near the Project site. There are no designated migratory corridors or linkages, significant nursery sites, fisheries resources, or designated Critical Habitat that occur on the Project site.

The Project has potential to impact San Joaquin kit fox, American badger (*Taxidea taxus*), western burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), as well as other nesting migratory birds and raptors that are protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. If the suggested mitigation measures are followed, the Project would have a ***less than significant*** impact to biological resources.

SECTION 1 - INTRODUCTION

QK prepared this Biological Analysis Report (BAR) to evaluate the potential of sensitive biological resources to be impacted by the proposed Karpe Development Project (Project). The Project, as proposed, would include the construction of a convenience store, fueling stations, and fuel storage tanks, among other components.

1.1 - Project Location

The Project site is at the southern boundary of the City of Bakersfield, California, just within City limits, on assessor's parcel numbers (APN) 517-030-05 and 517-030-08 (Figures 1-1 and 1-2). The Project is located on the northeast corner of the intersection of Taft Highway [State Route (SR) 119] and South "H" Street, approximately 0.1 mile east of SR 99. The Project is within U.S. Geological Survey (USGS) Quadrangle Gosford, Section 31, Township 30 south, Range 28 east, Mount Diablo Base and Meridian.

1.2 - Project Description

The Project, which will cover approximately 18 acres, consists of constructing and operating a truck stop to service motorists and professional truck drivers using SR 99. The Project incorporates several components, including:

- A convenience store with an attached fast food establishment;
- Fueling stations;
- Above- and below-ground fuel storage tanks;
- An automotive maintenance building;
- A truck scale;
- A sanitary dump station;
- A fenced dog park;
- A storm water retention basin;
- Paved parking areas;
- And other associated infrastructures.

1.3 - Purpose, Goals, and Objectives

The purpose of this BAR is to identify where sensitive biological resources may occur within and near the Project site, determine how those resources may be impacted by the proposed Project, and recommend avoidance, minimization, and mitigation measures to reduce potential impacts to a less than significant level. This BAR has been prepared to support an analysis of biological conditions as required by the California Environmental Quality Act (CEQA), and to support regulatory permit applications, if needed.

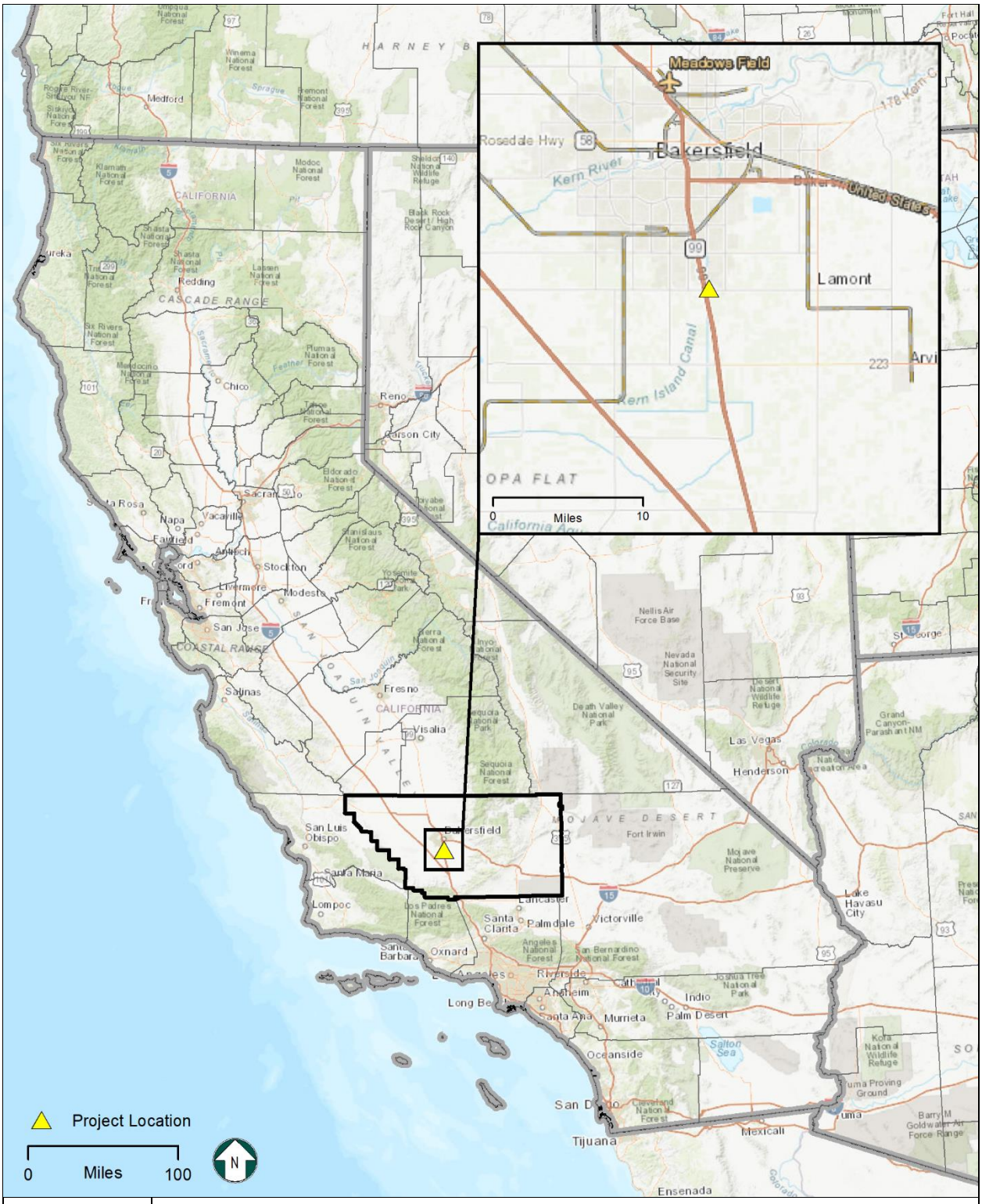


Figure 1-1
Regional Map,
Karpe Development Project,
Kern County, California



Figure 1-2
Project Location Map and Biological Study Area,
Karpe Development Project,
Kern County, California

SECTION 2 - METHODS

2.1 - Definition of Biological Study Area

The Biological Study Area (BSA) used for this BAR includes everything within the limits of the Project boundary and within a 250-foot buffer (see Figure 1-2).

2.2 - Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project,
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA),
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW),
- Other species included on the CDFW's Special Animals List,
- Plant species with a California Rare Plant Rank (CRPR) in categories 1 or 2,
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- None. Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.

- Potential. Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration). Protocol surveys were conducted, but negative results do not exclude the potential for a species to occur.

- Present. Species was observed on the site or has been recorded (e.g., California Natural Diversity Database records, other reports) on the site recently (within the last 5 years).

2.3 - Literature Review and Database Analysis

The following sources were reviewed for information on special-status biological resources in the project vicinity:

- CDFW's California Natural Diversity Database (CNDDB; CDFW 2019a; CDFW 2019b)
- CDFW's Biogeographic Information and Observation System (BIOS; CDFW 2019c)

- CDFW's California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2019)
- Calflora (Calflora 2019)
- U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2019a)
- USFWS Critical Habitat Mapper (USFWS 2019b)
- USFWS National Wetlands Inventory (NWI; USFWS 2019c)
- USGS National Hydrography Dataset (NHD; USGS 2019)
- Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2019)
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2019a)
- NRCS Lists of Hydric Soils (NRCS 2019b)
- Current and historical aerial imagery (Google LLC 2019)
- Topographic maps (USGS 2019)

For each of these data sources, the search was focused on the California USGS 7.5-minute quadrangle *Gosford,* in which the project is located, plus the surrounding eight quadrangles: *Rosedale, Oildale, Oil Center, Lamont, Weed Patch, Conner, Millux,* and *Stevens*. For the CNDDB, a 10-mile search radius was used.

The CNDDB provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database provides similar information as the CNDDB, but at a much lower spatial resolution. Much of this information in these databases is obtained opportunistically and is often focused on protected lands or on lands where development has been proposed. Neither database represents a comprehensive survey for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status resource could be present. The NWI and Web Soil Survey provide comprehensive data, but at a low-resolution requiring confirmation in the field. The IPaC system provides a list of federally listed and candidate species with potential to occur on the Project, even if they have not been documented nearby.

The results of the database inquiries were reviewed to develop a list of special-status resources that may be present within vicinity of the Project. This list was then evaluated against the existing conditions observed during the reconnaissance site visit of the BSA to determine which special-status resources have the potential to occur, and then the potential for impacts to those resources as a result of implementation of the Project.

2.4 - Reconnaissance-Level Field Survey

A reconnaissance survey of the BSA was conducted on September 26, 2019, by QK Associate Biologist Shannon Gleason. The survey consisted of meandering pedestrian transects spaced 50 to 100 feet apart throughout the entire Project and the 250-foot buffer, where feasible. Portions of the buffer fell within private property and these areas were visually surveyed with the aid of binoculars, to achieve 100% visual coverage of the BSA.

General tasks completed during the survey included: an inventory of plant and animal species observed; characterization of vegetation associations and habitat conditions within the BSA; assessment of the potential for federally and state-listed and special-status plant and wildlife species to occur on and near the Project; and assessment for migratory birds and raptors to nest on and near the Project. All locational data was recorded using ESRI Collector for ArcGIS software installed on an iPad and site conditions were documented with representative photographs.

SECTION 3 - REGULATORY SETTING

Regulated or sensitive resources that were studied and analyzed include special-status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement areas, and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the City of Bakersfield).

Potential impacts to biological resources were analyzed based on the following list of statutes. Summaries of these statues are provided in Appendix A.

- CEQA
- FESA
- CESA
- Federal Clean Water Act
- California Fish and Game Code
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- San Joaquin Valley Upland Species Recovery Plan
- Metropolitan Bakersfield General Plan
- Metropolitan Bakersfield Habitat Conservation Plan (MBHCP)

SECTION 4 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project and describes existing baseline conditions. The environmental setting of the BSA was obtained from various sources of literature, databases, and aerial photographs. Site conditions were verified and updated during the site reconnaissance survey conducted by a QK biologist (Table 4-1).

Table 4-1
Field Survey Personnel and Timing

Date	Personnel	Time	Weather Conditions	Temperature
September 26, 2019	Shannon Gleason	0915 - 1305	Partly cloudy	83 – 93 °F

4.1 - Physical Characteristics

The Project is situated in a region dominated by agricultural and urban development on the southern San Joaquin Valley floor. Land within the Project boundary is zoned for commercial use but has never been developed. Physical characteristics of the BSA are described below. Representative photographs of the BSA are included in Appendix B.

4.1.1 - TOPOGRAPHY

The BSA is located on the floor of the San Joaquin Valley, west of the Sierra Nevada foothills. The topography is flat, with an elevation of approximately 345 feet above mean sea level.

4.1.2 - CLIMATE

The region in which the BSA is located is characterized by a Mediterranean climate of hot summers and wet, mild winters. Average high temperatures range from 57 °F in January to 98 °F in July, and it is not uncommon for temperatures to exceed 100 °F during the summer (WRCC 2019). Average low temperatures range from 38 °F in December to 69 °F in July. Precipitation occurs primarily as rain, most of which falls between December and April. Precipitation may also occur as dense fog during the winter known as Tule Fog. Rain rarely falls during the summer months.

4.1.3 - LAND USE

The Project site is currently designated as General Commercial by the Metropolitan Bakersfield General Plan, and zoned General Commercial, but it has never been developed; the area east of the Project is also undeveloped. The Project is bounded to the west by the Kern Island Canal and South "H" Street and to the south by Taft Highway (SR 119). An automotive repair and smog shop and another commercial property are located west of the

Project and an RV park and mobile home park are south of the Project. The parcel north of the Project has historically been used for agriculture.

4.1.4 - SOILS

The BSA is underlain by three soil types: Granoso sandy loam, Kimberlina fine sandy loam, and Bakersfield fine sandy loam (Figure 4-1; NRCS 2019a).

The Granoso soil series consists of very deep, somewhat excessively drained soils that formed in alluvium derived from mixed rock sources (NRCS 1029a). These soils are found on alluvial fans and flood plains. Slopes range from 0 to 5 percent at elevations from 280 to 1,175 feet. The climate is arid with hot dry summers and somewhat moist winters; flooding is none to rare. Mean annual precipitation is 5 to 8 inches and mean annual air temperature is between 62 and 65 °F. Granoso soils are used primarily for irrigated crops such as cotton, alfalfa, carrots, and wheat. Some areas are used for pasture and homesites. Native vegetation is dominantly annual grasses and forbs.

The Kimberlina series consists of very deep, well-drained soils on flood plains and recent alluvial fans (NRCS 2019a). Soils are formed in mixed alluvium derived primarily from igneous and/or sedimentary rock sources. Slopes range from 0 to 9 percent at elevations from 125 to 2,250 feet. The climate is arid with hot, dry summers and cool winters. Mean precipitation is 4 to 8 inches annually and the mean annual air temperature ranges from 59 to 62 °F. Kimberlina soils are used for irrigated field, forage, and row crops, and for livestock grazing. When undisturbed these soils support annual grasses, forbs, and *Atriplex* (saltbush) species.

The Bakersfield series consists of very deep, somewhat poorly drained soils formed in stream alluvium derived primarily from granitic rock (NRCS 2019a). They occur on flood plains and in many areas, soils are artificially drained. Slopes range from 0 to 2 percent with elevations from 280 to 680 feet. The climate is arid with hot, dry summers and cool, somewhat moist winters. Mean precipitation is 5 to 8 inches annually and the mean annual air temperature is between 62 and 67 °F. Bakersfield soils are used mainly for irrigated crops such as cotton, alfalfa, dry beans, and lettuce. Some areas are used for pasture and homesites. Native vegetation is dominantly annual grasses and forbs with scatter willow and sycamore trees.

Granoso sandy loam, at slopes between 0 and 2 percent, is designated hydric by the U.S. Department of Agriculture (USDA) under Criteria 2 and 4, depending on location (NRCS 2019b). Bakersfield fine sandy loam, at slopes between 0 and 1 percent, is designated hydric under Criterion 4. Kimberlina fine sandy loam in Kern County is not considered hydric.

The USDA designates soils as hydric if they show evidence of such, or, if based on the range of characteristics for the soil series, they will at least in part meet one of more field indicators of hydric soils in the united states (NRCS 2019b). Criterion 4 includes map unit components that are frequently flooded for long duration or very long duration during the growing season. Criterion 2 includes map unit components in Aquic suborders, great groups or

subgroups; Albolls suborder; Historthels great group; Histoturbels great group; or Andic, Cumulic, Pachic, or Vitrandic subgroups.

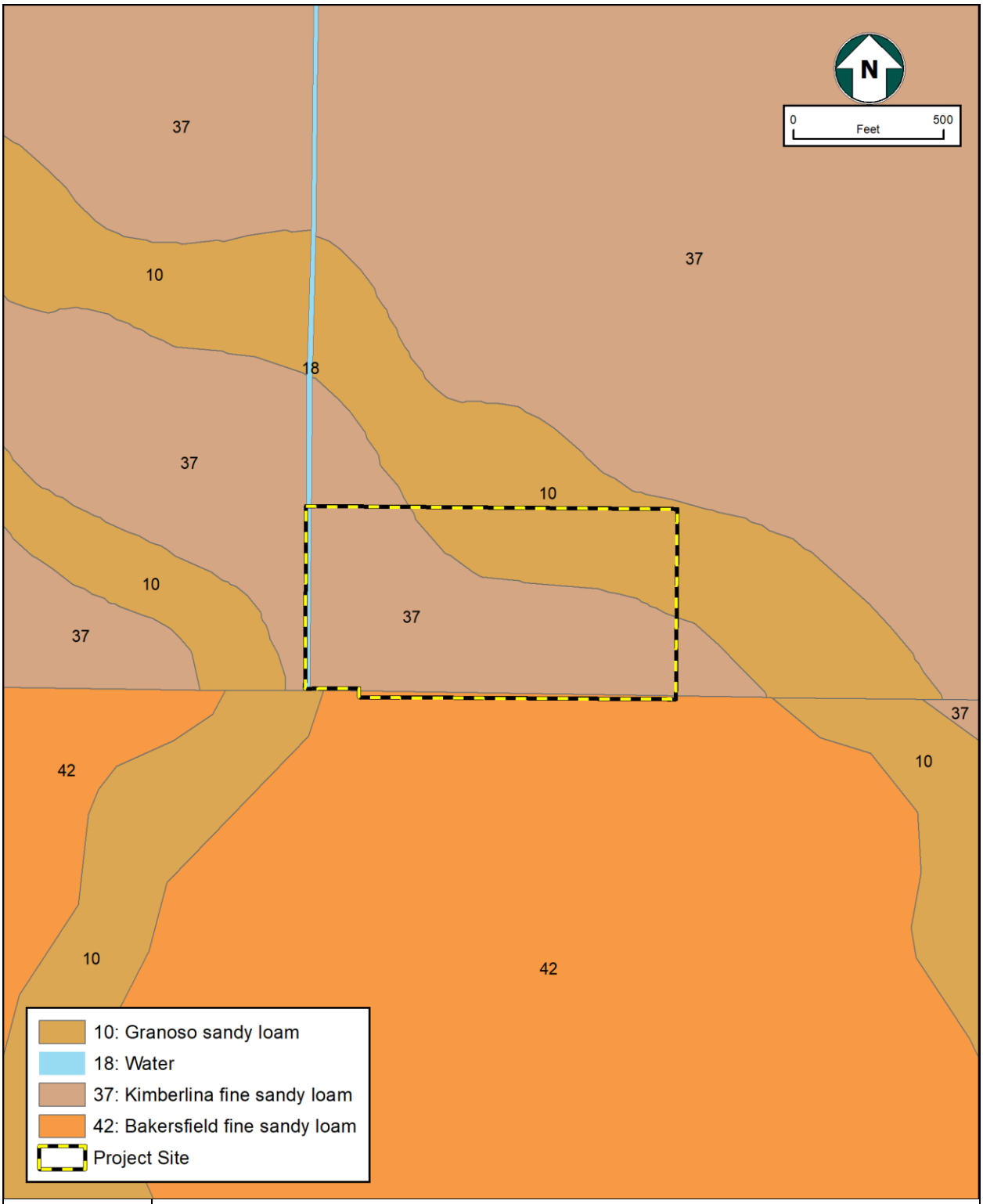


Figure 4-1
Soils within the Project
Karpe Development Project,
Kern County, California

4.1.5 - HYDROLOGY

There is one jurisdictional waterway within the BSA, which is designated as an artificial path by the NWI (Figure 4-2). The Kern Island Canal runs north-south on the western border of the Project and is classified as "R4SBCx", which describes the canal as a riverine intermittent streambed that is seasonally flooded, and which was artificially excavated. At the time of the reconnaissance survey, the Kern Island Canal contained southward-flowing water.

East of the Kern Island Canal, an irrigation ditch runs southward along the western border of the Project, turns east at the southwest corner of the Project, and then drains into a subterranean inlet (Appendix B – Representative Photographs). The NWI has not assigned a designation to this waterway. At the time of the survey there was a steady flow of water in this ditch, and the establishment of aquatic vegetation suggests that there has been a constant water flow for some time.

The BSA is in an Area of Minimal Flood Hazard as designated by FEMA (FEMA 2019).

4.2 - Vegetation and Other Land Cover

Three habitat types were observed within the BSA: annual grassland, urban, and fallow dryland grain crops (Figure 4-3). The habitats observed on-site have been described in the context of *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988) and cross-referenced to the CWHR, where appropriate. The urban and fallow dryland grain crop habitat types are considered subcategories of Developed Habitats in the CWHR. A complete list of plant species observed is included in Appendix C.

Annual Grassland

Annual Grassland is described by Mayer & Laudenslayer (1988) as open grasslands composed primarily of annual plant species, which also will occur as understory plants in woodland habitats. Structure is dependent largely on weather patterns and livestock grazing, and large quantities of dead material can be found in summer months. Plant species found include introduced annual grasses such as brome (*Bromus* sp.) and wild oats (*Avena* sp.), and forbs such as red-stemmed filaree (*Erodium cicutarium*) and turkey mullein (*Croton setigerus*). Many wildlife species use annual grassland habitat for foraging, but some require special habitat features such as cliffs, ponds, and woodlands for breeding and refuge. Characteristic species for annual grasslands include western fence lizard (*Sceloporus occidentalis*), western rattlesnake (*Crotalus oreganus*), California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), turkey vulture (*Cathartes aura*), burrowing owl (*Athene canicularia*), and horned lark (*Eremophila alpestris*).

The entirety of the Project is dominated by annual grassland habitat. Ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), and foxtail barley (*Hordeum murinum*) cover the majority of the Project and areas to the south and east, interspersed with larger annual herbs like Russian thistle (*Salsola tragus*) and pigweed amaranth (*Amaranthus albus*). There are areas of bare ground where access roads cross the Project.

The western boundary and southwestern corner of the Project, which are adjacent to the irrigation ditch described in Section 4.1.5, support plants that are slightly more water-dependent, including Johnson grass (*Sorghum halepense*) and curly dock (*Rumex crispus*).

Urban

Mayer and Laudenslayer (1988) describe urban habitat as variable with five vegetative structures defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. These structures vary based on the associated urban development.

Areas in the BSA west and south of the project are comprised of urban habitat, which includes paved roads, commercial development, and highly disturbed vacant land. Vegetation commonly associated with this habitat includes ornamental herbs (grass lawns, weeds, and flowers), shrubs, hedges, and trees, as well as ruderal species. Species composition within this urban habitat varies with the type of ornamental plantings. Common plants in the Project site included pigweed amaranth (*Amaranthus albus*), fiddleneck (*Amsinckia menziesii*), puncture vine (*Tribulus terrestris*), Russian thistle (*Salsola tragus*), red brome (*Bromus madridentis* ssp. *rubens*), Bermuda grass (*Cynodon dactylon*) and London rocket (*Sisymbrium irio*).

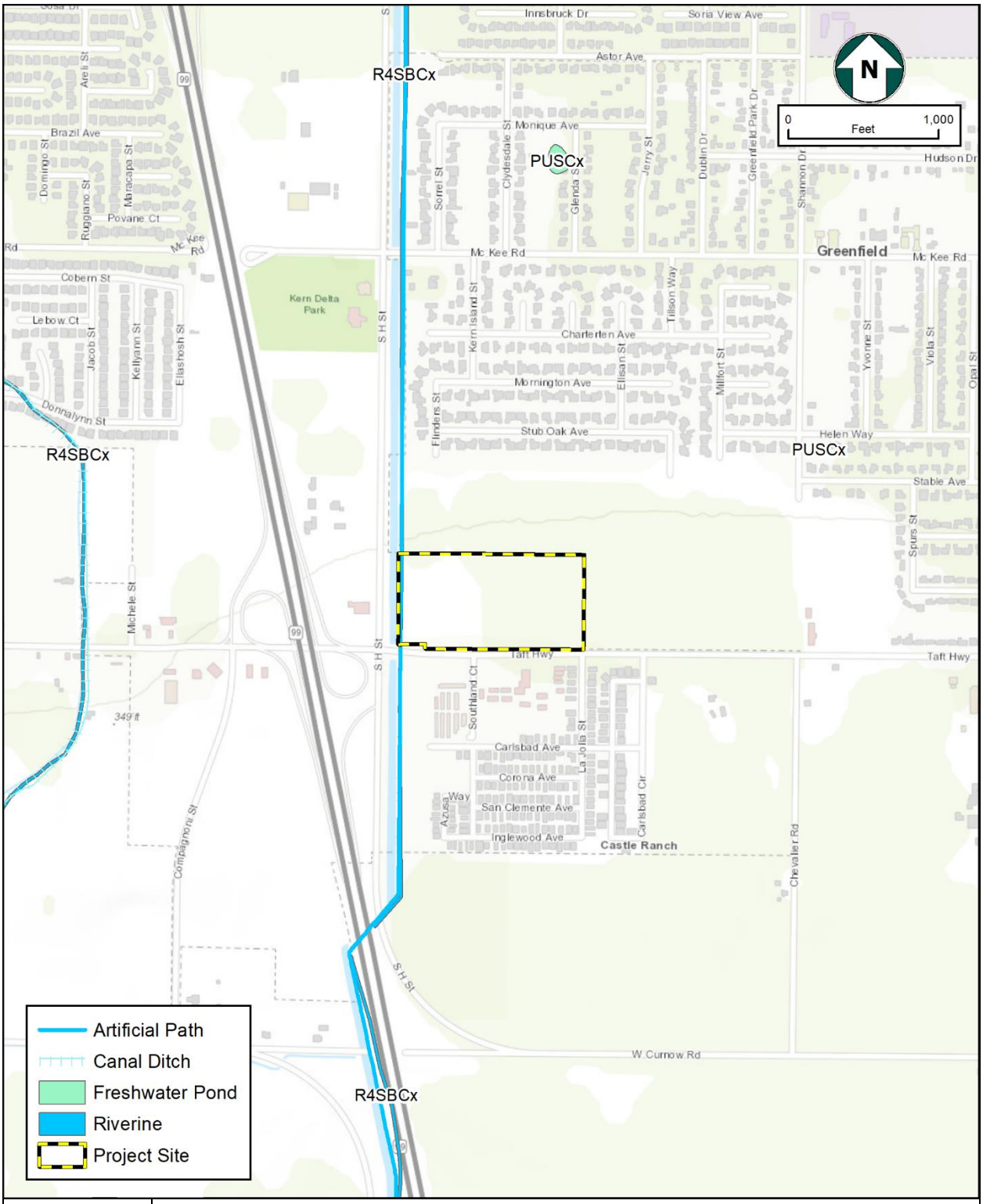


Figure 4-2
NWI and NHD Records of Aquatic Resources,
Karpe Development Project,
Kern County, California



Figure 4-3
Vegetation Communities within the Project,
Karpe Development Project,
Kern County, California

Dryland Grain Crops (Fallow)

Vegetation in dryland grain and seed crops are not irrigated and are planted annually in rows in the fall and harvested in the spring. These grain crops may be planted in rotation with other irrigated crops. Often a dryland crop may be grown one year, then left fallow for one or more years before being planted again. Sometimes fallowed land may be grazed by livestock. At the time of the survey, habitat north of the Project consisted of a fallow crop field, vegetated with non-native plants such as ripgut brome (*Bromus diandrus*) and alfalfa (*Medicago sativa*).

4.3 - General Wildlife Observations

Wildlife observed in the BSA is typical for urban and agricultural habitats. Bird species included house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), common raven (*Corvus corax*), Eruasian collared dove (*Streptopelia decaocto*), turkey vulture (*Cathartes aura*), and western meadowlark (*Sturnella neglecta*). Mammal species included domestic dog (*Canis familiaris*) tracks, California ground squirrel (*Otospermophilus beecheyi*) sign, and potential San Joaquin kit fox (*Vulpes macrotis mutica*) sign (i.e. potential den and scat). No direct sightings for special-status species were observed during the survey. A complete list of wildlife observed is included in Appendix C.

SECTION 5 - SENSITIVE RESOURCES

Local, State, and federal agencies regulate special-status species and other sensitive biological resources and require an assessment of their presence or potential for presence to be on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed on the Project site and evaluates the potential for the Project site to support additional sensitive biological resources. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB and CNPS, species occurrence records from other sites in the vicinity of the survey area, and the results of the survey of the Project site. The MBHCP specifically lists four sensitive plant and wildlife species; San Joaquin kit fox (*Vulpes macrotis mutica*), San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), Tipton's kangaroo rat (*Dipodomys nitratoides nitratoides*) and Bakersfield cactus (*Opuntia basilaris var. treleasei*). The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- **No Potential**: Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees).

- **Potential**: Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration). Negative survey results do not exclude the potential for a species to occur.

- **Present**. Species was observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

5.1 - Special-Status Species

Table 5-1 presents the list of special-status plant and animal species determined to have potential to occur on-site and identifies if the Project may affect the species and threaten the viability of the species population. The complete list of species evaluated for this Project is included in Appendix D. Each species is discussed in the subsections below.

Table 5-1
Special-Status Species with Potential to Occur On-Site

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Potentially Affected by Project? Yes/No	Viability Threat? Yes/No
Birds			
Athene cunicularia burrowing owl	BCC/- -/SSC	Yes	No
Buteo swainsoni	-/ST	Yes	No

Swainson's hawk	-/-		
Mammals			
Taxidea taxus American badger	-/- -/SSC	Yes	No
Vulpes macrotis mutica San Joaquin kit fox	FE/ST -/-	Yes	No

CRPR (California Rare Plant Rank):	FE	Federally Endangered
1A Presumed Extinct in California	FT	Federally Threatened
1B Rare, Threatened, or Endangered in California and elsewhere	FC	Federal Candidate Species
2A Plants presumed extirpated in California, but more common elsewhere	FS	Federally Sensitive
	SE	State Endangered
2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere	ST	State Threatened
	SC	State Candidate
CRPR Threat Code Extension:	SS	State Sensitive
.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)	SSC	State Species of Special Concern
	SFP	State Fully Protected
.2 Fairly endangered in California (20-80% occurrences threatened)	SR	State Rare
.3 Not very endangered in California (<20% of occurrences threatened)		

5.1.1 - SPECIAL-STATUS PLANT SPECIES

The literature and database review identified fifteen (15) special-status plant species known to occur or with potential to occur within the vicinity of the Project (See evaluation table in Appendix D). None of those species were determined to have a potential to occur within the BSA because there was no habitat present that would support those species.

5.1.2 - SPECIAL-STATUS ANIMAL SPECIES

The literature and database review identified 30 special-status animal species known to occur or with the potential to occur in the vicinity of the Project (see evaluation table in Appendix D). Of those species, four were determined to have a potential to occur on-site:

- **Burrowing owl** (*Athene cunicularia*) – Species of Special Concern
- **Swainson's hawk** (*Buteo swainsoni*) – State Threatened
- **American Badger** (*Taxidea taxus*) – Species of Special Concern
- **San Joaquin kit fox** (*Vulpes macrotis mutica*) – Federally Endangered, State Threatened

Burrowing Owl

ATHENE CUNICULARIA

Status: Species of Special Concern

The burrowing owl is a broadly distributed, small ground-dwelling owl that can be found throughout western North America, Florida, Central and South America, Hispaniola, Cuba,

and northern Lesser Antilles, and the Bahamas (Shuford and Gardali 2008). Typically, this species can be found in a variety of habitat types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Rodewald 2015).

Burrowing owls utilize earthen burrows, typically relying on other fossorial mammals to construct their burrows such as prairie dog (*Cynomys* ssp.) or American badger (*Taxidea taxus*) (USFWS 1998). In Florida, burrowing owls are capable of digging their own burrows (Poulin 2011). In California, they are associated with California ground squirrels (*Otospermophilus* beecheyi) and prairie dogs (Winchell 1994). They use a burrow throughout the year for temperature regulation, off-spring rearing, shelter, and escape from predators. While burrows are most often earthen, they have been documented using atypical burrows such as pipes, culvers, and other man-made structures as burrows, most often as shelter (Shuford and Gardali 2008). Burrowing owls can have several burrows in close proximity to each other that they may use frequently in case of predators in the vicinity.

The nearest recorded occurrence (EONDX 82909) included three sites with multiple individuals including a total of 5 adult and 6 juveniles. This 2007 recorded occurrence is approximately 1.5-miles east of the Project site. Currently there is an existing canal and farmland crops in the vicinity. The most recent recoded occurrence (EONDX 105727) included one adult being flushed from a burrow. This 2016 recorded occurrence is approximately 5.7-miles south of the Project site. Currently the area has been converted to a solar farm and farmland crops are in the vicinity.

Based on site conditions during the reconnaissance survey, the annual grassland could support nesting and foraging burrowing owls. The fallow fields to the north of the Project, provides potential foraging habitat.

Swainson's Hawk

BUTEO SWAINSONI

Status: State Threatened

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Bechard et al. 2010, Zeiner et al. 1990). Some hawks may be resident, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging and have been known to nest in large eucalyptus trees along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity for successful nest sites.

The nearest and most recent recorded occurrence (EONDX 115317) included one adult sitting in a nest located in a group of eucalyptus trees (*Eucalyptus globulus*) and another flying overhead. This 2017 recorded occurrence is approximately 2.0-miles south of the Project site. Based on site conditions during the reconnaissance survey, there are in the

vicinity of the Project site that could support nesting Swainson's hawks (i.e., large trees). The agricultural lands adjacent to the Project, specifically the fallow grain field to the north, provides potential foraging habitat.

American Badger

TAXIDEA TAXUS

Status: Species of Special Concern

The American badger is an uncommon permanent resident throughout California except for the northern North Coast (CDFW 1995). They can typically be found in grasslands, deserts, and drier habitats. Typical physical characteristics include a variety of fur color from gray, brown, white, rust, buff, or orange with a white stripe running from the nose to the back neck. Badgers also have short legs with long claws that are used for digging dens (Kays and Wilson 2009).

Badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground. Normally, they have a single den entrance that is approximately eight to 12 inches in an elliptical or half-moon shape, similar to their body shape. Dens are usually found in friable soils, allowing them to dig easier. American badgers spend a majority of their time near a den; however, they can have multiple dens in an area that can be used at the same time.

The nearest and most recent recorded occurrence (EONDX 57313) was recorded in 1900 and is located approximately 1.5-miles north of the Project site. Since the time of the recorded occurrence the area has been developed for commercial, industrial and residential properties along with road improvements. Based on site conditions during the reconnaissance survey, the site has the potential to provide denning and foraging habitat for the species. The American badger is known to be a transient forager in the vicinity and may be present from time to time.

San Joaquin Kit Fox

VULPES MACROTIS MUTICA

Status: Federally Endangered and State Threatened

San Joaquin kit foxes are a subspecies of kit fox that is endemic to the Central Valley of California (USFWS 1998, 2010). They are found primarily in the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley. They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. San Joaquin kit foxes are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land. San Joaquin kit foxes uses subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be visible above ground near their dens during the day, particularly in the spring. The feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

The most recent recorded occurrence (EONDX 115009) near the Project site was located approximately 8.0-miles northwest of the Project site. The occurrence was documented in 2017 and a deceased SJKF was found and salvaged. The area the SJKF was located at includes residential and commercial development. The nearest recorded occurrence (EONDX 53951) was documented in 2006 and included several SJKF dens. The recorded occurrence was approximately 0.7-miles northwest of the Project site and the area has been developed with commercial and residential properties.

During the reconnaissance survey, a potential SJKF natal den was observed near the center of the Project site (Figure 5-1). The survey was conducted outside of the breeding season, but prey remains, and claw marks were present at the den entrances. There is suitable foraging habitat in the agricultural, residential, and open habitat lands surrounding the Project, and the species may occur as transient. The SJKF is known to be a transient forager and could be a resident in the Project vicinity. This species is potentially present on the Project site from time to time.

5.1.3 - Other Protected Species

Nesting Birds

Habitat within the BSA supports nesting native bird species, which are protected by the federal MBTA. The reconnaissance survey was conducted outside of the nesting bird season (February 1st to September 15th) but several bird species were observed on or in the vicinity of the Project site. Various species of migratory birds will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. Cliff swallow (*Petrochelidon pyrrhonata*) nests were observed within the BSA located to the southwest of the Project site (Figure 5-1).

5.2 - Sensitive Natural Communities

5.2.1 - Sensitive Plant Communities

The database and literature review identified three sensitive plant communities within 10-miles of the Project site including: Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, and Valley Saltbush Scrub. The nearest Great Valley Riparian Forest community occurrence (EONDX 28906) is located approximately 6.7-miles northwest of the Project site. The nearest Great Valley Mesquite Scrub community occurrence (EONDX 28800) is located approximately 7.8-miles southwest of the Project site. The nearest Valley Saltbush Scrub community occurrence (EONDX 16319) is located approximately 23.6-miles southeast of the Project site.

No sensitive plant community was observed on the Project site because the vicinity of the Project site has been mostly developed for commercial use, road improvements and surrounding areas have been repeatedly disturbed for decades for agricultural purposes.

5.2.2 - CRITICAL HABITATS

The Project does not overlap with any federally designated critical habitats (Figure 5-2; USFWS 2019b). Critical habitat for two species, Buena Vista Lake Ornate Shrew (*Sorex ornatus relictus*) and California condor (*Gymnogyps californianus*), occur within 20-miles of the Project site. Buena Vista Lake Ornate Shrew critical habitats are located approximately 10.3-miles southwest and 16.4-miles west of the Project site. California condor critical habitat is located approximately 19.6-miles south of the Project site.

5.1 - Jurisdictional Aquatic Resources

A formal delineation of waters of the U.S. and waters of the State was not conducted for this Project and a delineation was not warranted. The search of the NHD and NWI databases showed that there is one jurisdictional waterway within the BSA (Figure 4-2, USGS 2019, USFWS 2019c). The waterway is designated as an artificial path by the NWI and is classified as "R4SBCx." No temporary or permanent bodies of water were observed on the Project site during the reconnaissance survey.

5.2 - Wildlife Movement

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes [*Canis latrans*], mule deer [*Odocoileus hemionus californicus*]). They can also be small scale movement corridors, such as riparian zones, that provide connectivity and cover to support movement at a local scale.

The Project is not located within any identified wildlife linkages or corridors identified by the California Essential Habitat Connectivity Project (Spencer et al. 2010). The Kern Island Canal located along the western border of the Project could potentially be used by wildlife to travel through the area.

5.3 - Resources Protected by Local Policies and Ordinances

The Metropolitan Bakersfield General Plan and the Kern County General Plan contains policies aimed at the preservation of biological resources and promotes coordination with federal and State resource agencies. These policies are listed in Appendix A. The General Plan also outlines a work plan with implementation measures by which to uphold these policies, including a biological resource review for proposed projects and development of mitigation measures for these projects.



Figure 5-1
Sensitive Biological Resources Map,
Karpe Development Project,
Kern County, California

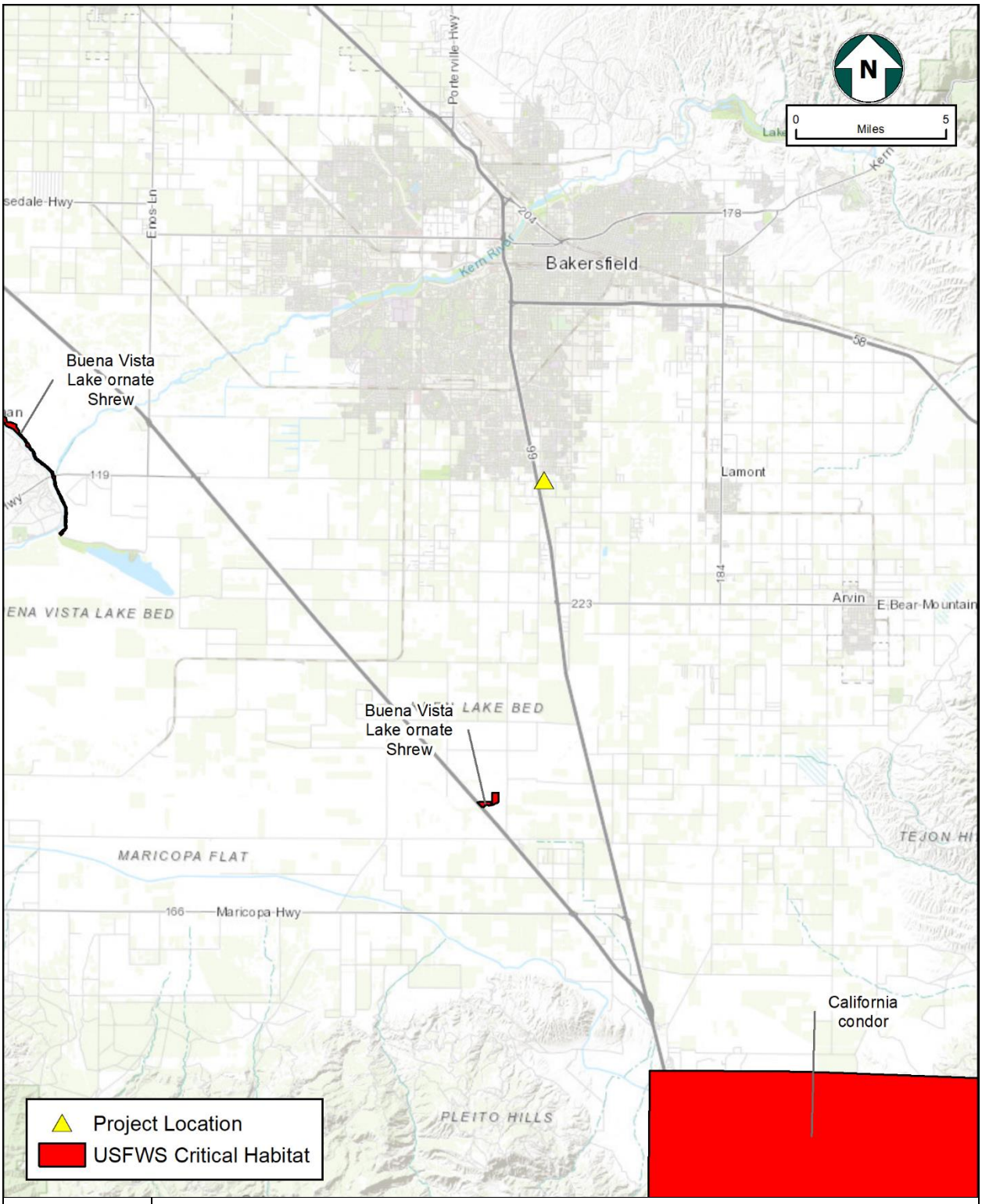


Figure 5-2
Critical Habitat in the Project Vicinity,
Karpe Development Project,
Kern County, California

5.1 - Habitat Conservation Plans

The Project is within the boundaries of the two Habitat Conservation Plans (HCPs). The Metropolitan of Bakersfield Habitat Conservation Plan (MBHCP) and the PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan. The PG&E HCP covers activity for PG&E resources only and it does not apply to the Project.

The City of Bakersfield and Kern County developed the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) that allows take of federally listed species included in the MBHCP area. The current MBHCP was issued by the USFWS under Section 10(a)(1)(B) of the FESA in 1994 (USFWS 1994), which is currently undergoing renewal. A separate permit was issued by the CDFW under Section 2081 of the CESA in 2014 (CDFW 2014, as amended) to align with the MBHCP for those species covered under both FESA and CESA. The MBHCP and associated State ITP are designed to offset impacts resulting from the incidental take of listed species and the loss of habitat incurring through the authorization of otherwise lawful activities. The goal of the MBHCP is to acquire, preserve, and enhance native habitats that support special-status species while allowing development to proceed as set forth in the Metropolitan Bakersfield General Plan (MBGP). The BSA covered by the MBHCP contains both the City of Bakersfield and Kern County jurisdictions.

The Project is located within the boundaries of the Metropolitan Bakersfield Habitat Conservation Plan. The MBHCP provides incidental take authorization for four special-status species that are known to occur within the plan area. These include the San Joaquin kit fox, San Joaquin antelope squirrel, Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*) and Bakersfield cactus (*Opuntia basillaris treleasei*). The MBHCP requires payment of a mitigation fee for all new development that necessitates a grading permit or conditional use permit on previously undeveloped land, which includes agricultural land. Impacts to species for projects that fall within the MBHCP include mitigation and are outlined in Section 6.

SECTION 6 - IMPACT ANALYSIS AND AVOIDANCE AND MINIMIZATION MEASURES

This section provides an analysis of the potential for special-status biological resources to be impacted by the proposed Project. The analysis was developed using the CEQA Appendix G questions, but also provides sufficient information to support NEPA documentation.

6.1 - Special-Status Species

The proposed project would have a significant effect on biological resources if it would:

a) *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.*

6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

No special-status plant species have potential to occur within the BSA because of existing habitat and soil conditions. No impacts to special-status plant species will occur. No impacts to the Bakersfield cactus will occur.

6.1.2 - PROJECT IMPACTS TO SPECIAL-STATUS ANIMAL SPECIES

Tipton kangaroo rat and San Joaquin antelope squirrel

No impacts to the Tipton kangaroo rat or the San Joaquin antelope squirrel, both species covered by the MBHCP will occur because those species were not identified as having a potential to occur on the Project site.

Burrowing Owl

There is no positive evidence that burrowing owl is present within the BSA, but suitable nesting and foraging habitat exists within the BSA. Direct impacts to burrowing owl could occur in construction activities occur near an active burrow during the nesting season. No potential burrowing owl burrows or their sign was observed during the reconnaissance survey, but the species is present year-round and travel from burrow to burrow periodically. It is possible for a transient burrowing owl to move on site at any time. No indirect impacts are anticipated given the short duration of construction in any given area and loss of marginal suitable nesting or foraging habit would occur as a result of the Project.

Swainson's Hawk

There is no positive evidence that Swainson's hawk is present within the BSA, but suitable nesting habitat exists within the vicinity of the Project site and foraging habitat exists in the fallow alfalfa field to the north of the Project site. Direct impacts to Swainson's hawks could occur if construction activities occur near an active nest during the nesting season, but there

are no potential nesting sites located on the Project site. Potential nesting sites are located to the west of the site and are outside the BSA. No indirect impacts are anticipated given the short duration of construction in any given area and no loss of suitable nesting or foraging habit would occur as a result of the Project.

American Badger

There is no positive evidence that American badger is present within the BSA, but suitable denning and foraging habitat exists within the BSA. Direct impacts to American badger could occur if construction activities occur near an active den. The potential San Joaquin kit fox natal den could possibly be used by American badger. Because this species is highly mobile, it may be present from time to time on the Project site as a transient forager. No indirect impacts are anticipated given the short duration of construction in any given area and loss of low-quality suitable denning and foraging habit would occur as a result of the Project.

San Joaquin Kit Fox

The old natal den that was found on the Project site is positive evidence that San Joaquin kit fox has lived on the Project site in the past. Suitable denning and foraging habitat exist within and around the Project. Because this species is highly mobile, it may be present from time to time on the Project site as a transient forager or part-time resident. Direct impacts resulting in injury or death of pups could occur if an active natal den is located near a construction area, causing the adults to alter normal behaviors. Direct impacts by vehicles is a concern for San Joaquin kit foxes in urban environments, but the proposed Project would not cause an appreciable increase in traffic at night when the species is most active. Direct impacts could also include entrapment in trenches or pipes during construction. Indirect impacts will occur if potential dens are eliminated and foraging habitat is lost at the Project site during construction.

Nesting Birds

The Project site contains low quality suitable habitat for a wide variety of nesting bird species. Although no trees or shrubs are anticipated to be removed, Project activities adjacent to nesting birds could result in direct impacts to nests from noise and vibration caused by construction activities. Normal behaviors in nesting adults could result from construction activities and human presence that could lead to nest failure. Direct impacts include noise and dust from construction and loss of ground nesting and forage habitat would occur as a result of the Project.

Avoidance and Minimization Measures

The limited disturbance footprint for this Project and the short duration of activities at any given location, coupled with implementation of avoidance and minimization would reduce impacts of the Project to special-status wildlife species to level that would be less than significant. The following measures are recommended to avoid and minimize impacts to burrowing owl, Swainson's hawk, American badger, San Joaquin kit fox, and nesting birds.

BIO-1 The Project will comply with the applicable Minimization Measures as excerpted from the Metropolitan Bakersfield Urban Development Incidental Take Permit #2081-2013-058-04, as amended. These measures are also known as Conditions of Approval (COA) and include COA 7.1 through 7-18, where applicable.

BIO- 2 Prior to ground disturbing activities, a qualified wildlife biologist shall conduct a biological clearance survey no less than 14 days and not more than 30 calendar days prior to the onset of ground disturbance activities.

The clearance survey shall include walking transects to identify presence of American badger, Swainson's hawk, burrowing owl, nesting birds and other special-status species or signs of, and sensitive natural communities. The pre-construction survey shall be walked by no greater than 30-foot transects for 100 percent coverage of the Project site and the 250-foot buffer, where feasible. If no evidence of special-status species is detected, no further action is required but measure BIO-3 should be implemented.

BIO-3 If dens/burrows that could support the San Joaquin kit fox or American badger are discovered during the pre-activity surveys conducted under BIO-MM-1, the avoidance buffers outlined below should be established. No work would occur within these buffers unless the biologist approves and monitors the activity.

- Potential Den – 50 feet
- Atypical Den – 50 feet (includes pipes and other man-made structures)
- Known Den – 100 Feet
- Natal/Pupping Den – 500 feet

BIO-3 The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011).

a. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction or Project site.
b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds should not exceed 20 miles per hour (mph) within the Project site.
c. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor should cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks should be installed

in the trench. Before such holes or trenches are filled, the contractor should thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the Project site should be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If at any time an entrapped or injured kit fox is discovered, work in the immediate area should be temporarily halted and USFWS and CDFW shall be consulted.

d. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS and CDFW has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
e. No pets, such as dogs or cats, should be permitted on the Project sites to prevent harassment, mortality of kit foxes, or destruction of dens.
f. Use of anti-coagulant rodenticides and herbicides in Project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional Project-related restrictions deemed necessary by the USFWS and CDFW. If rodent control must be conducted, zinc phosphide should be used because of the proven lower risk to kit foxes.
g. A representative should be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative should be identified during the employee education program and their name and telephone number shall be provided to the USFWS.
h. The Sacramento Fish and Wildlife Office of USFWS and CDFW should be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov.
i. All sightings of the San Joaquin kit fox should be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a

topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

j. Any Project-related information required by the USFWS or questions concerning the above conditions, or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at: Endangered Species Division, 2800 Cottage Way, Suite W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.

k. If burrowing owl are found to occupy the Project site and avoidance is not possible, burrow exclusion may be conducted by qualified biologists only during the non-breeding season, before breeding behavior is exhibited, and after the burrow is confirmed empty through non-invasive methods (surveillance). Replacement or occupied burrows shall consist of artificial burrows at a ratio of 1 burrow collapsed to 1 artificial burrow constructed (1:1). Ongoing surveillance of the Project site during construction activities shall occur at a rate sufficient to detect Burrowing owl, if they return.

BIO-4 If construction is planned outside the nesting period for raptors (other than the western burrowing owl) and migratory birds (February 15 to August 31), no mitigation is required. If construction is planned during the nesting season for migratory birds and raptors, a preconstruction survey to identify active bird nests should be conducted by a qualified biologist to evaluate the site and a 250-foot buffer for migratory birds and a 500-foot buffer for raptors. If nesting birds are identified during the survey, active raptor nests should be avoided by 500 feet and all other migratory bird nests should be avoided by 250 feet. Avoidance buffers may be reduced if a qualified on-site monitor determines that encroachment into the buffer area is not affecting nest building, the rearing of young, or otherwise affecting the breeding behaviors of the resident birds. Because nesting birds can establish new nests or produce a second or even third clutch at any time during the nesting season, nesting bird surveys shall be repeated every 30 days as construction activities are occurring throughout the nesting season.

No construction or earth-moving activity should occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (left the nest) and have attained sufficient flight skills to avoid Project construction areas. Once the migratory birds or raptors have completed nesting and young have fledged, disturbance buffers will no longer be needed and can be removed, and monitoring can cease.

BIO-5 If all Project activities are completed outside of the Swainson's hawk nesting season (February 15 through August 31), this mitigation measure need not be applied. If construction is planned during the nesting season, a preconstruction survey should be conducted by a qualified biologist to evaluate the site and a 0.5-mile buffer around the site for active Swainson's hawk nests. If potential Swainson's hawk nests or nesting substrates occur within 0.5 mile of the Project site, then those nests or substrates must be

monitored for Swainson's hawk nesting activity on a routine and repeating basis throughout the breeding season, or until Swainson's hawks or other raptor species are verified to be using them. Monitoring should be conducted according to the protocol outlined in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The protocol recommends that ten visits be made to each nest or nesting site: one during January 1-March 20 to identify potential nest sites, three during March 20-April 5, three during April 5-April 20, and three during June 10-July 30. To meet the minimum level of protection for the species, surveys should be completed for at least the two survey periods immediately prior to Project-related ground disturbance activities. During the nesting period, active Swainson's hawk nests should be avoided by 0.5 mile unless this avoidance buffer is reduced through consultation with the CDFW and/or USFWS. If an active Swainson's hawk nest is located within 500 feet of the Project or within the Project site, the Project proponent should contact CDFW for guidance.

If no Swainson's hawk nests are found, no further action is required.

BIO-6 If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities should not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nest location, the sensitivity of the nesting Swainson's hawk to disturbances, and at the discretion of the qualified biologist.

BIO-7 A qualified biologist should conduct a pre-construction survey on the Project site and within 500 feet of its perimeter, where feasible, to identify the presence of the western burrowing owl. The survey should be conducted between 14 and 30 days prior to the start of construction activities. If any burrowing owl burrows are observed during the preconstruction survey, avoidance measures should be consistent with those included in the CDFW staff report on burrowing owl mitigation (CDFG 2012). If occupied burrowing owl burrows are observed outside of the breeding season (September 1

through January 31) and within 250 feet of proposed construction activities, a passive relocation effort may be instituted in accordance with the guidelines established by the California Burrowing Owl Consortium (1993) and the California Department of Fish and Wildlife (2012). During the breeding season (February 1 through August 31), a 500-foot (minimum) buffer zone should be maintained unless a qualified biologist verifies through noninvasive methods that either the birds have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

In addition, impacts to occupied burrowing owl burrows should be avoided in accordance with the following table unless a qualified biologist approved by CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

BIO-8 Prior to ground disturbance activities, or within one week of being deployed at the Project site for newly hired workers, all construction workers at the Project site should attend a Construction Worker Environmental Awareness Training and Education Program, developed and presented by a qualified biologist.

The Construction Worker Environmental Awareness Training and Education Program should be presented by the biologist and should include information on the life history wildlife and plant species that may be encountered during construction activities, their legal protections, the definition of "take" under the Endangered Species Act, measures the Project operator is implementing to protect the species, reporting requirements, specific measures that each worker must employ to avoid take of the species, and penalties for violation of the Act. Identification and information regarding special-status or other sensitive species with the potential to occur on the Project site should also be provided to construction personnel. The program should include:

- An acknowledgement form signed by each worker indicating that environmental training has been completed.
- A copy of the training transcript and/or training video/CD, as well as a list of the names of all personnel who attended the training and copies of the

signed acknowledgement forms shall be maintain on site for the duration of construction activities.

Significance After Mitigation. Implementation of the avoidance, minimization, and mitigation measures above will reduce impacts to special-status wildlife species to a less than significant level.

6.2 - Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

The Project does not support any riparian or other sensitive natural communities, nor does it overlap with any designated critical habitat. The Project would have no impacts to these resources and no measures are warranted.

6.3 - Jurisdictional Aquatic Resources

The proposed project would have a significant effect on biological resources if it would:

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

There are no wetlands or water features on or in the vicinity of the Project. The Project would have no impacts to jurisdictional aquatic resources and no measures are warranted.

6.4 - Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

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

The Project is not located within a mapped wildlife movement corridor or linkage. The Kern Island Canal may be used by local wildlife as a corridor to travel throughout the area, but the canal will not be impacted by the Project. No other drainages or riparian habitat were identified during the reconnaissance survey. The Project would not have any impacts to wildlife movement corridors and no measures are warranted.

6.5 - Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

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

The Project does not conflict with the Metropolitan of Bakersfield General Plan and is not subject to any local ordinances. Therefore, there are no impacts with respect to local policies and ordinances and no measures are warranted.

6.6 - Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

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

The two Habitat Conservation Plans, MBHCP and PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan, are the only plans overlying the proposed Project. The goal of the MBHCP is to acquire, preserve, and enhance native habitats that support special-status species while allowing development to proceed as set forth in the MBGP. The study area covered by the MBHCP contains both the City of Bakersfield and Kern County jurisdictions. The proposed project does fall within the city limits of Bakersfield and will follow the approved MBHCP mitigation measures. The PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan only applies to PG&E maintenance projects and does not apply to the currently proposed Project. The PG&E San Joaquin Valley Operations and Maintenance Habitat Conservation Plan only applies to PG&E operations and maintenance projects, and it does not apply to this Project

The proposed Project will not conflict with any adopted Habitat Conservation Plan upon compliance with the COA outlined in the MBHCP ITP and the recommended avoidance and minimization measures noted above. The Project would not conflict with an adopted Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plan, so there will be no impacts and no measures are warranted.

SECTION 7 - LIMITATIONS, ASSUMPTIONS, AND USE RELIANCE

This Biological Analysis Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are derived from a site reconnaissance and specified historical and literature sources. The biological investigation is limited by the scope of work performed. Reconnaissance-level biological surveys are limited by the environmental conditions present at the time of the surveys. Biological surveys do not guarantee that specific organisms are not present and will not be discovered in the future within the site. In particular, mobile animal species could occupy the site on a transient basis or re-establish populations in the future. No other guarantees or warranties, expressed or implied, are provided.

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APPENDIX A

REGULATORY SETTING
KARPE DEVELOPMENT PROJECT

Regulatory Setting

Federal Laws and Regulations

Federal Endangered Species Act of 1973 (USC, Title 16, Sections 1531 -1543)

The federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special

management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act (USC, Title 16, Sections 703 - 711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (USC, TITLE 16, SECTION 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucoephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC, Title 33, Sections 1521 - 1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Applicable State Laws and Regulations

California Environmental Quality Act (California Public Resources Code, Sections 21000 - 21178, and Title 14 CCR, Section 753, and Chapter 3, Sections 15000 - 15387)

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposed of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the "fully mitigate" standard of CESA, and other applicable conditions.

Porter-Cologne Water Quality Control Act

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters

deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

Various Sections of the California State and Fish and Game Code

SECTION 460 AND SECTIONS 4000-4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

SECTIONS 1600 THROUGH 1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports of has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

SECTIONS 3511, 4700, 5050, AND 5515

The protection of fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statues prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

SECTIONS 1900 THROUGH 1913 - NATIVE PLANT PROTECTION ACT

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of

the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local and Regional Laws, Regulations, and Policies

Metropolitan Bakersfield General Plan

Last revised and approved in April 2009, the Metropolitan Bakersfield General Plan has been prepared as a joint planning effort between the City of Bakersfield and Kern County to govern land use decisions within the city limits and unincorporated Kern County land within the Bakersfield Metropolitan Area. Its purpose is to give long-range guidance to those making decisions affecting the future character of the Metropolitan Bakersfield planning area. It represents the official statement of the community's physical development as well as its economic, social, and environmental goals. The general plan also acts to clarify and articulate the relationship and intentions of local government to the rights and expectations of the general public, property owners, and prospective investors. Through the plan, the local jurisdiction can inform these groups of its goals, policies, and development standards, thereby communicating what must be done to meet the objectives of the plan (City of Bakersfield and County of Kern 2016).

Chapter V. Conservation Element of the Metropolitan Bakerfield General Plan (MBGP)

Biological Resources

Goal 1. Conserve and enhance Bakersfield's biological resources in a manner which facilitates orderly development and reflects the sensitivities and constraints of these resources.

Goal 2. To conserve and enhance habitat areas for designated "sensitive" animal and plant species.

Policy 1. Direct development away from "sensitive biological resource" areas, unless effective mitigation measures can be implemented.

Policy 2. Preserve areas of riparian vegetation and wildlife habitat within floodways along rivers and streams, in accordance with the Kern River Plan Element and channel maintenance programs designed to maintain flood flow discharge capacity.

Policy 3. Discourage, where appropriate, the use of off-road vehicles to protect designated sensitive biological and natural resources.

Metropolitan Bakersfield Habitat Conservation Plan

The City of Bakersfield and Kern County developed the MBHCP that allows take of federally listed species included in the MBHCP area. The current MBHCP was issued by the USFWS under Section 10(a)(1)(B) of the FESA in 1994 and is currently undergoing renewal. A separate permit was issued by the CDFW under Section 2081 of the CESA (CESA 9322) in 2014 to align with the MBHCP for those species covered under both FESA and CESA. The MBHCP is designed to offset impacts resulting from the incidental take of listed species and the loss of habitat incurred through the authorization of otherwise lawful activities. The goal of the MBHCP is to acquire, preserve, and enhance native habitats that support special-status species while allowing development to proceed as set forth in the MBGP. The study area covered by the MBHCP contains both the City of Bakersfield and Kern County jurisdictions.

The MBHCP program is funded through the collection of one-time mitigation fees, prior to ground disturbance, paid on all new construction taking place within the program boundaries. Upon payment of the mitigation fee and receipt of County project approval, a development permit applicant would be allowed the "incidental take" of special-status species in accordance with State and Federal Endangered species laws. The mitigation funds collected will be deposited into a trust fund and are administered by the Implementation Trust, which is composed of representatives from the City of Bakersfield and Kern County trustees, USFWS, CDFG, and members of the public as advisors. The mitigation fees will provide for the acquisition and/or enhancement of natural lands and restorable lands for the purpose of creating preserves supporting the covered species. The MBHCP would also provide for reduction of take within the developed areas through relocation or displacement of individuals in areas affected by development. In addition, the MBHCP provides for monitoring of the quality of habitat within the preserves, the status of special-status species, and habitat restoration and enhancement programs, which will be used to indicate the success or failure of the plan.

The Karpe Development Project site is located within the boundaries of the Metropolitan Bakersfield Habitat Conservation Plan. The MBHCP provides incidental take authorization for four special-status species that are known to occur within the plan area. The MBHCP requires payment of a mitigation fee for all new development that necessitates a grading permit or conditional use permit on previously undeveloped land, which includes agricultural land.

Summary of Take Minimization Measures as Excerpted from the Metropolitan Bakersfield Urban Development Incidental Take Permit #2081-2013-058-04, as Amended

This attachment contains a summary of the take minimization measures excerpted from the Metropolitan Bakersfield Urban Development Incidental Take Permit (ITP). These measures (also known as Conditions of Approval) are generally applicable to all projects within the area of coverage of the ITP, but actual applicability to any specific project is dependent upon findings of site-specific surveys as defined in 7.1 and 7.4 below. These measures and additional measures can be found in the body of the ITP and ITP amendment.

7. TAKE MINIMIZATION MEASURES:

The following requirements are intended to ensure the minimization of incidental take of Covered Species in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of Covered Species:

7.1. Biological Clearance Survey. Prior to either Permittee issuing a Permittee Authorization to a Developer, the Developer applying for such Permittee Authorization shall provide a written Biological Clearance Survey conducted by a CDFW-approved Qualified Wildlife Biologist (Condition of Approval 5.10), no more than 30 calendar days prior to a Developer beginning Covered Activities on a given Permittee-authorized project. The Biological Clearance Survey shall include full coverage transect surveys for SJKF dens (See Condition of Approval 7.4, below), kangaroo rat burrows (in areas identified in Condition of Approval 7.8, below), and Bakersfield cactus (for proposed projects north of State Route (SR) 58 and east of SR 99), in the proposed development footprint and a buffer zone of 50 feet in size beyond the proposed development footprint (except for any portions of the buffer zone that are already fully developed or are beyond the access rights of the developer). The Biological Clearance Survey shall be valid for no more than 30 calendar days. In the event that Covered Activities are not initiated, as authorized by either Permittee, within 30 calendar days of a Biological Clearance Survey, the Biological Clearance Survey shall be repeated. Each Developer pursuing a Permittee Authorization shall bear the costs of the Biological Clearance Survey being conducted and summarized in writing.

7.2. Covered Species Detection. If one or more of the "Conditions" described below in Table 1 is detected during the Biological Clearance Survey (Condition of Approval 7.1) for any proposed Developer project, Permittees shall either: (1) not grant a Permittee Authorization for said Developer project until implementation of the Table 1 referenced "Required Minimization Measures" is demonstrated by the Developer in writing to the

Permittees; or (2) any issued Permittee Authorization shall require, via specific written conditions within the Permittee Authorization, that the start of grading/building activities may not occur until implementation of the Table 1 referenced "Required Minimization Measures" are demonstrated in writing to the Permittees.

Table 1. Conditions within Proposed Development Footprint

Condition Within Proposed Development Footprint	Required Minimization Measures
Known, active, or natal SJKF den	Conditions of Approval 7.5 and 7.6
Kangaroo rat burrows (Conceptual Southwest Focus Area only)	Conditions of Approval7.8, 7.9, and 7.10
One or more Bakersfield cactus clumps/plants	Conditions of Approval 7.11, 7.12, and 7.13

7.3. Developer Notification of Covered Species Detection. For Developer projects on which one or more of the Table 1 "Condition within Proposed Development Footprint" (Condition of Approval 7.2) are present, Permittees shall require the Developer to provide CDFW and Permittees with a written "Notice of Grading Start" at least 5 business days prior to ground disturbance. Such a "Notice of Grading Start" shall only be submitted after all "Required Minimization Measures" referenced in Table 1 are implemented for that specific Developer project. The "Notice of Grading Start" shall include, at a minimum, the following information: (1) project location, including a map and major cross streets; (2) project name; (3) Developer name and contact information (phone, email, and mailing address); (4) name of the Qualified Wildlife Biologist that conducted the Biological Clearance Survey; (5) a copy of the Biological Clearance Survey; and (6) written information submitted to demonstrate compliance with Condition of Approval 7.2, 7.5, 7.6 and 7.8-7.13, as applicable. Developer should keep as a record proof of their notification to CDFW.

In addition to the Biological Clearance Survey as required in Condition of Approval7.1, SJKF den surveys shall be annually conducted each January if Covered Activities are not completed at a Project site, to identify any SJKF that may have occupied the site after completion of the Biological Clearance Survey and to maximize detection of potential natal dens. The Developer shall provide CDFW and Permittees with a written report by February 5th that includes at a minimum the following information: (1) project location, including a map and major cross streets; (2) project name; (3) Developer name and contact information (phone, email, and mailing address); (4) name of the Designated Biologist that conducted the SJKF den survey; (5) a copy of the Biological Clearance Survey as required in Condition of Approval 7.1; and (6) written information submitted to demonstrate compliance with Conditions of Approval 7.2, 7.5, 7.6 and 7.8 through 7.13, as

applicable. Developer should keep as a record proof of their notification to CDFW. Each Developer shall bear the costs of implementing the SJKF Den Surveys.

7.4. SJKF Den Survey. SJKF Den Surveys shall evaluate the proposed development footprint and a 50 foot buffer zone (except for any portions of the buffer zone that are already fully developed) for potential, known, active, atypical, and natal SJKF dens, as defined in the Service 2011 "*Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance*."

7.5. SJKF Den Avoidance. If a known, active, or natal SJKF den is discovered during the SJKF Den Survey/Biological Clearance Survey, the Permittees shall not issue a Permittee Authorization unless the Developer demonstrates that they established a permanent minimum buffer using fencing or flagging as follows: (1) at least 100 feet around den(s); (2) at least 200 feet around natal dens (dens in which SJKF young are reared); and (3) at least 500 feet around any natal dens with pups (except for any portions of the buffer zone that are already fully developed). Buffer zones shall be considered Environmentally Sensitive Areas, and no Covered Activities are allowed within a buffer except per Condition of Approval 7.6., and as follows: If the work within the buffer area will not result in the destruction of the den, the den should be conserved. If the den is unoccupied (based on the required four consecutive days of monitoring), then the den can be covered in a secure manner to prevent access by SJKF while the work is being conducted. After the work is done, the den can be uncovered to allow use by SJKF. If the den is occupied and the SJKF don't want to leave, then a smaller buffer could be established, including a barricade to prevent the SJKF from exiting the den and entering the work site. A qualified biologist shall monitor the den while the work is being conducted. Permittees shall notify the Service and CDFW's Regional Representative immediately via telephone or e-mail if any SJKF active dens, natal dens, or occupied atypical dens are discovered within or immediately adjacent to any proposed development footprint. Each Developer pursuing a Permittee Authorization shall bear the costs of implementing the SJKF den avoidance requirements.

A reduced SJKF den avoidance buffer may be authorized with written approval by CDFW. Buffer reduction requests shall be submitted by the Designated Biologist and describe why a reduced buffer will not impact SJKF. CDFW may add additional minimization measures as a condition of any buffer reduction approval; these additional CDFW specified minimization measures shall be followed by the Developer that proposed the buffer reduction.

7.6. SJKF Den Excavation. For active dens and potential dens that exhibit signs of SJKF use or characteristics suggestive of SJKF dens (including dens in natural substrate and in/under man- made structures) that cannot be avoided as per Condition of Approval 7.5, and if, after four consecutive days of monitoring with tracking medium or infrared camera, a Qualified Wildlife Biologist has determined that SJKF is not currently present, the den may be excavated. Natal dens shall not be excavated until the pups and adults have vacated and

then only after consultation with the Service and CDFW. If the excavation process reveals evidence of current use by SJKF then den excavation shall cease immediately and tracking or camera monitoring as described above shall be conducted/resumed. Excavation of the den may be completed when, in the judgment of a Qualified Wildlife Biologist, the SJKF has escaped from the partially excavated den. SJKF dens shall be carefully excavated until it is certain no individuals of SJKF are inside. Dens shall be fully excavated, filled with dirt, and compacted to ensure that SJKF cannot reenter or use the den during Covered Activities. If an individual SJKF does not vacate a den within the proposed construction footprint within a reasonable timeframe, Permittees shall contact the Service and CDFW and get written guidance (email will suffice) from both agencies prior to proceeding with den excavation. Each Developer pursuing a Permittee Authorization shall bear the costs of implementing the SJKF den excavation requirements.

7.7. SJKF Detection on Construction Site. Permittees shall condition all Permittee Authorizations to require notification to the appropriate Permittee and CDFW within 24 hours in the event that a SJKF is observed denning or utilizing structures or materials within an active construction footprint. In addition, a minimum 100 foot no disturbance buffer from the area being used by SJKF as a denning site shall be implemented until Conditions of Approval7.5 or 7.6 can be implemented by a Qualified Wildlife Biologist funded by the Developer.

7.8. TKR Trapping and Salvage. If the Biological Clearance Survey prepared pursuant to Condition of Approval7.1 identifies TKR burrows within the proposed construction footprint of proposed Developer projects within the "Conceptual Southwest Focus Area" as identified in Figure 4 of the MBHCP, Permittees shall not issue a Permittee Authorization until a TKR Qualified Biologist (see Condition of Approval 5.11) conducts a minimum of five (5) consecutive nights of live small mammal trapping, with high trap densities focused at and around TKR burrows, runways, seed caches, and dust baths. How and where captured animals will be held and the final release location and specifics shall be in accordance a CDFW-approved TKR Relocation Plan prepared in accordance with Condition of Approval 6.8. The Developer for which the Biological Clearance Survey was conducted shall bear the costs of TKR trapping, salvage, and relocation.

7.9. TKR Burrow Excavation. Following live trapping activities conducted in accordance with Condition of Approval 7.8, any potential TKR burrows (e.g., any kangaroo rat burrows) present within the development footprint shall be fully excavated by hand by the TKR Qualified Biologist. The TKR Qualified Biologist shall relocate any TKR encountered in the excavated burrows to the release site(s) identified in the CDFW-approved TKR Relocation Plan prepared in accordance with Condition of Approval 6.8. The TKR Qualified Biologist shall also collect and move dormant or torpid TKR encountered to an artificial burrow installed at the release site(s) identified in the CDFW-approved TKR Relocation Plan prepared in accordance with Condition of Approval 6.8.

7.10. TKR Record of Handling. TKR Qualified Biologist(s) shall maintain a record of all TKR handled. This information shall include for each animal: (1) the locations (Global Positioning System (GPS) coordinates and maps) and time of capture and/or observation as well as release; (2) sex; (3) approximate age (adult/juvenile); (4) weight; (5) general condition and health, noting all visible conditions including gait and behavior, diarrhea, emaciation, salivation, hair loss, ectoparasites, and injuries; and (6) ambient temperature when handled and released. A Relocation Summary shall be prepared by the TKR Qualified Biologist and submitted by the Developer to the Permittees and CDFW as part of the information accompanying the "Notice of Grading Start" described in Condition of Approval7.3.

7.11. Bakersfield Cactus Avoidance. If the Biological Clearance Survey prepared pursuant to Condition of Approval 7.1 identifies Bakersfield cactus within the proposed construction footprint of a proposed Developer project, Permittees shall not issue a Permittee Authorization until the Developer demonstrates that all Bakersfield cacti shall be avoided by a minimum of 25 feet, unless

Condition of Approval 7.13 is implemented. This avoidance distance may be lessened on a specific case-by-case basis if CDFW concurs in writing that a modified distance proposed by a Bakersfield Cactus Qualified Botanist (Condition of Approval 5.12) is sufficient to avoid direct or indirect take of Bakersfield cactus.

7.12. Bakersfield Cactus Avoidance Fencing. Sturdy, highly visible, plastic construction avoidance fencing (or comparable fencing approved in writing by the CDFW Regional Representative) shall be installed around Bakersfield cactus avoidance areas (Condition of Approval7.11) and located in accordance with direction from the Bakersfield Cactus Qualified Botanist. Fencing shall be securely staked and installed in a durable manner that would be reasonably expected to withstand wind and weather events and last at least through the construction period. Fencing shall be inspected at least twice weekly during the construction period. Fencing shall be removed upon completion of construction of the Developer project.

7.13. Bakersfield Cactus Translocation. The Bakersfield Cactus Qualified Botanist shall translocate Bakersfield cactus, which cannot be avoided by construction activities in accordance with Condition of Approval 7.11, to the nearest suitable habitat specifically identified in the Bakersfield Cactus Translocation Plan (Condition of Approval6.9) prior to disturbance of any Bakersfield cacti. Translocated cacti shall be planted in habitat that Permittees have proven to be suitable for Bakersfield cactus by demonstrating that Bakersfield cactus occurs naturally at the same general location and the plantable area has suitable soils, vegetation, and other aspects to support a self- sustaining population of Bakersfield cactus. The density of plantings shall not exceed densities that occur naturally in the vicinity of the Project. Pads shall be taken from the translocated clumps of cacti and planted in the receiver sites to increase the number of plants.

7.14. Covered Species Injury. If a Covered Species is injured as a result of Project related activities, a Qualified Wildlife Biologist shall immediately take it to a CDFW approved wildlife rehabilitation or veterinary facility that routinely evaluates and treats the injured Covered Species. Permittees shall identify the potential facilities before starting Covered Activities. The Developer or appropriate Permittee shall bear any costs associated with the care or treatment of such injured Covered Species. The Permittee with jurisdiction shall notify CDFW of the injury to the Covered Species immediately by telephone and e-mail followed by a written incident report. Notification shall include the date, time, location, and circumstances of the incident and the name of the facility where the animal was taken.

7.15. Daily Entrapment Inspections. Permittee Authorizations shall require that workers on Developer projects shall inspect all open holes, sumps, and trenches within the development footprint covered by the Permittee Authorization at the beginning, middle, and end of each day for trapped Covered Species. All trenches, holes, sumps, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope and that are between two- and eight feet deep shall be covered when workers or equipment are not actively working in the excavation, which includes cessation of work overnight, or shall have an escape ramp of earth or a non-slip material with a less than 1:1 (45 degree) slope. All trenches, holes, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope and greater than eight feet deep shall be covered when workers or equipment are not actively working in the excavation and at the end of each work day. Trenches, holes, sumps, or other excavations that are covered long term shall be inspected at the beginning of each working day to ensure inadvertent entrapment has not occurred. If any worker discovers that Covered Species have become trapped, the Developer and their workers shall cease all Covered Activities in the vicinity and notify Permittees immediately, whom shall in turn notify CDFW immediately. Developer and its workers shall allow the Covered Species to escape unimpeded if possible before Covered Activities are allowed to continue, or, alternatively, a Qualified Wildlife Biologist shall capture and relocate the animal, in accordance with CDFW direction regarding the final disposition of the animal. The Developer for which the Biological Clearance Survey was conducted shall bear the costs of Covered Species salvage.

7.16. Materials Inspection. Permittee Authorizations shall require that workers on Developer projects thoroughly inspect for Covered Species in all construction pipe, culverts, or similar structures with a diameter of 7.6 centimeters (three inches) or greater that are stored for one or more overnight periods before the structure is subsequently moved, buried, or capped. If during inspection one of these animals is discovered inside the structure, workers shall notify Permittees and allow the Covered Species to safely escape that section of the structure before moving and utilizing the structure. In the event that Permittees are notified of such an incident, Permittees shall notify CDFW in writing (via email will suffice) within 48 hours of the incident.

7.17. Equipment Inspection. Permittee Authorizations shall require that workers shall inspect for Covered Species under vehicles and equipment before the vehicles and equipment are moved. If a Covered Species is present, the worker shall wait for the Covered Species to move unimpeded to a safe location. Alternatively, the Developer shall contact a Qualified Wildlife Biologist to determine if they can safely move the Covered Species out of harm's way in compliance with this ITP.

7.18. Sump Surveys. Permittees shall be allowed to train personnel/staff to inspect work areas and buffer zones prior to Operations and Maintenance (O&M) activities in sumps or other similar features to make determinations if there are any potential (as defined in the Service 2011 "Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance") den sites. If potential den sites are observed, a Qualified Wildlife Biologist shall conduct a SJKF den survey in accordance with Condition of Approval7.4 prior to any O&M activities being conducted in sumps or other similar features within the Project Area by either Permittee. If a known, active, or natal SJKF den is discovered during the SJKF Den Survey, the O&M work shall not proceed unless the Public Works Department (or other Permittee department conducting the O&M work) demonstrates to the appropriate Designated Representative that either: (1) den avoidance will occur as per Condition of Approval7.5; or (2) den excavation has occurred in accordance with Condition of Approval 7.6.

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS OF THE *KARPE DEVELOPMENT PROJECT*



Photograph 1: Southwest corner of Project site, along Kern Island Canal, facing north.
GPS Coordinates: 35.266975˚N, -119.02087˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 2: Southwest corner of Project site, facing drainage water along SR 119, facing west.
GPS Coordinates: 35.266975˚N, -119.02087˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 3: Northwest corner of BSA, facing southeast.
GPS Coordinates: 35.269304˚N, -119.020790˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 4: Northwest corner of BSA, facing east.
GPS Coordinates: 35.269304˚N, -119.020790˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 5: Northeast corner of Project site, facing southwest.
GPS Coordinates: 35.268603˚N, -119.016675˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 6: Northeast corner of Project site, facing south.
GPS Coordinates: 35.268603˚N, -119.016675˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 7: Southeast corner of Project site, facing north.
GPS Coordinates: 35.266914˚N, -119.016728˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 8: Southeast corner of Project site, facing northwest.
GPS Coordinates: 35.266914˚N, -119.016728˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 9: Potential SJKF natal den located in the center of the Project site.
GPS Coordinates: 35.267740˚N, -119.019089˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 10: Potential SJKF natal den located in the center of the Project site.
GPS Coordinates: 35.267740˚N, -119.019089˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 11: Old prey remains found outside potential SJKF natal den.
GPS Coordinates: 35.267740˚N, -119.019089˚W.
Photograph taken by Shannon Gleason on September 26, 2019



Photograph 12: Cliff swallow nests observed under Kern Island Canal bridge.
GPS Coordinates: 35.267740˚N, -119.019089˚W.
Photograph taken by Shannon Gleason on September 26, 2019

APPENDIX C

PLANT AND ANIMAL SPECIES OBSERVED WITHIN THE BIOLOGICAL STUDY AREA KARPE DEVELOPMENT PROJECT

Table C-1
Plant Species Observed within the Biological Study Area on September 26, 2019.
Karpe Development Project, Kern County, California

Scientific Name	Common Name	Native or Introduced
Trees		
Cupressus sempervirens	Italian cypress	Introduced
Eucalyptus camaldulensis	red gum eucalyptus	Introduced; Cal-IPC Limited
Liquidambar styraciflua	sweetgum	Introduced
Shrubs		
Atriplex polycarpa	allscale saltbush	Native
Herbs		
Amaranthus albus	pigweed amaranth	Introduced
Amsinckia menziesii	fiddleneck	Native
Eclipta prostrata	false daisy	Native
Erigeron sumatrensis	tropical horseweed	Introduced
Lactuca serriola	prickly lettuce	Introduced
Medicago sativa	alfalfa	Introduced
Rumex crispus	curly dock	Introduced; Cal-IPC Limited
Salsola tragus	Russian thistle	Introduced; Cal-IPC Limited
Sisymbrium irio	London rocket	Introduced; Cal-IPC Limited
Tribulus terrestris	puncture vine	Introduced; Cal-IPC Limited
Grasses		
Avena fatua	wild oat	Introduced; Cal-IPC Moderate
Bromus diandrus	ripgut brome	Introduced; Cal-IPC Moderate
Bromus madridentis ssp. *rubens*	red brome	Introduced; Cal-IPC High
Chloris virgate	feather fingergrass	Introduced
Cynodon dactylon	Bermuda grass	Introduced; Cal-IPC Moderate
Echinichloa colona	jungle rice	Introduced
Hordeum murinum	foxtail barley	Introduced; Cal-IPC Moderate
Sorghum halepense	Johnsongrass	Introduced

Table C-2
Animal Species Observed within the Biological Study Area on September 26, 2019.
Karpe Development Project, Kern County, California

Scientific Name	Common Name	Native or Introduced
Amphibians and Reptiles		
Lithobates catesbeianus	American bullfrog	Introduced
Uta stansburiana	side-blotched lizard	Native
Birds		
Anas platyrhynchos	mallard	Native
Aphelocoma californica	California scrub jay	Native
Calypte anna	Anna's hummingbird	Native
Cathartes aura	turkey vulture	Native
Charadrius vociferous	killdeer	Native
Corvus corax	common raven	Native
Mimus polyglottos	northern mockingbird	Native
Petrochelidon pyrrhonota	American cliff swallow	Native
Pooecetes gramineus	vesper sparrow	Native
Streptopelia decaocto	Eurasian collared dove	Introduced
Sturnella neglecta	western meadowlark	Native
Mammals		
Canis familiaris	domestic dog*	Introduced
Spermophilus beecheyi	California ground squirrel*	Native
Sylvilagus audobonii	desert cottontail*	Native
Vulpes macrotis mutica	San Joaquin kit fox*	Native

* *Indicates that only sign (e.g., dens or burrows, scat, prey remains, tracks) of the species was observed*

APPENDIX D

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS FOR THE KARPE DEVELOPMENT PROJECT

Table D-1
Special-Status Plant Species in the Regional Vicinity of the Project Site,
Karpe Development Project, Kern County, California

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Sensitive Natural Communities				
Great Valley Cottonwood Riparian Forest	-/- -/S1.1	This community requires fine-grained alluvial soils adjacent to perennial or semi-perennial streams with frequent flooding and with permanent ground water in the tree root zone.	None	Suitable habitat absent from the Project. Nearest CNDDB occurrence is approximately 6.7 miles northwest of the Project (EONDX 28906).
Great Valley Mesquite Scrub	-/- -/S3.1	This community is composed of an open woodland or savanna dominated by *Prosopis glandulosa torreyana* and *Atriplex polycarpa*. Understories are grassy in good rainfall years, though usually dominated by introduced annuals. This community is found in sandy loams of alluvial origin, often with wind-modified microtopography. Mesquite requires a high-water table. Sierra snowmelt provided the necessary groundwater for the perennial phreatophytes.	None	Suitable habitat absent from the Project. Nearest CNDDB occurrence is approximately 7.8 miles southwest of the Project (EONDX 28800).
Valley Saltbush Scrub	-/- -/S2.1	This community consists of open, gray or blue-green chenopod scrubs, usually over a low herbaceous annual understory. Cover types dominated by *Atriplex polycarpa* or *Atriplex spinifera* are differentiable. Also consists of sandy to loamy soils without surface alkalinity. Usually found on rolling, dissected alluvial fans.	None	Suitable habitat absent from the Project. Nearest CNDDB occurrence is approximately 2.6 miles southeast of the Project (EONDX 16319).
Plants				

Astragalus hornii var. *hornii* Horn's milk-vetch	-/- 1B.1/-	Found in meadows and seeps, alkali playas, wetlands, and along lake margins at elevations between 200 and 1,000 feet. It blooms from May to September.	None	Suitable habitat absent from the Project. The most recent CNDDB occurrence is from 2003 and is approximately 8.8 miles northwest of the Project (EONDX 70413).
Atriplex cordulata var. *cordulata* heartscale	-/- 1B.2/-	Found in alkali grasslands on saline and alkaline soils in and around scald areas. Found in chenopod scrub and valley and foothill grassland habitats.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 10 miles southwest of the Project (EONDX 90916).
Atriplex coronota var. *coronata* Lost Hills crownscale	-/- 1B.2/-	Found in dried ponds and alkaline soils in vernal pools, chenopod scrub, and valley and foothill grassland habitats. Grows in association with Frankenia (*Frankenia* spp.), saltbush (*Atriplex* spp.), and saltgrass (*Distichlis* spp.).	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 9.4 miles southwest of the Project (EONDX 76184).
Atriplex tularensis Bakersfield smallscale	-/- 1A/-	This annual herb occurs in chenopod scrub. This annual flowers between June and October and it ranges in elevation from 295 to 656 feet.	None	Suitable habitat absent. The nearest CNDDB occurrence is approximately 0.9 miles northeast of the Project (EONDX 2522), is from 1921, and extirpated.
Caulanthus californicus California jewelflower	FE/SE 1B.1/-	This annual herb is endemic to California and is found in chenopod scrub, valley and foothill grasslands, and pinyon-juniper woodlands, generally on non-alkaline, sandy soil. It flowers between February and May, and it ranges in elevation from 200 to 3,300 feet.	None	Suitable habitat absent. The nearest CNDDB occurrence is approximately 10 miles northwest of the Project (EONDX 20291), is from 1900, and extirpated.
Chloropyron molle ssp. *hispidum* hispid salty bird's-beak	-/- 1B.1/-	Found in meadows and seeps, alkali playas, wetlands, and valley and foothill grasslands, in damp alkaline soils, often with saltgrass, at elevations under 500 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 5 miles east of the Project (EONDX 90916), from 1946, and is likely extirpated.
Delphinium recurvatum recurved larkspur	-/- 1B.2/-	This perennial plant is commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland. It is most common on sandy or clay alkaline soils. It flowers from	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 8 miles northwest of the Project (EONDX 51922) and is possibly extirpated.

		March to May, and it ranges in elevation from 10 to 2,592 feet.		
Eremalche parryi ssp. kernensis *Kern mallow*	FE/- 1B.2/-	This annual is endemic to California and occurs in chenopod scrub, valley and foothill grasslands, and pinyon and juniper woodlands, on dry, open, sandy to clay soils, at elevations between 200 and 4,300 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 5.3 miles south of the Project (EONDX 107405).
Eriastrum hooveri Hoover's eriastrum	DL/- 1B.1/-	This annual can be found in gravelly soil, with Chenopod scrub and in valley and foothill grassland. The blooming period for this plant March to July.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 10 miles southwest of the Project (EONDX 71517) and is from 1939 and extirpated.
Escholzia lemmonii ssp. *kernensis* Tejon poppy	-/- 1B.1/-	Annual plant found in open valley and foothill grasslands and chenopod scrub at elevations between 450 and 4,500 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 10 miles north of the Project (EONDX 101748)
Imperata brevifolia *California satintail*	-/- 2B.1/-	This perennial grass occurs in wet meadows and seeps within chaparral, Coastal Sage Scrub, or Creosote Bush Scrub communities. These communities are typically composed of mesic or alkali soils. This grass flowers between September and May, at elevations up to 4,000 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 9.8 miles northwest of the Project (EONDX 2766)
Layia leucopappa *Comanche Point layia*	-/- 1B.1/-	This annual plant is found in chenopod scrub and valley and foothill grasslands in dry clay soils, often with weedy grasses, at elevations between 300 and 1,000 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 10 miles northeast of the Project (EONDX 42610)
Monolopia congdonii *San Joaquin woollythreads*	FE/- 1B.2/-	This annual herb prefers chenopod scrub, and/or valley and foothill grassland. It flowers between February and May, and it ranges in elevation from 197 to 2,625 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 10 miles northeast of the Project (EONDX 42610)
Navarretia setiloba Piute Mountains navarettia	-/- 1B.1/-	Annual herb found in cismontane woodland, pinyon and juniper woodlands, and valley and foothill	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately

		grasslands on clay or gravelly loam at elevations between 600 and 2,100 feet.		10 miles northeast of the Project (EONDX 56125) and is extirpated.
Opuntia basilaris var. treleasei Bakersfield cactus	FE/SE 1B.1/-	This perennial stem succulent plant occurs in chenopod scrub, valley and foothill grasslands and cismontane woodlands on sandy or gravelly soils. It flowers between April and May, and it ranges in elevation from 400 to 1,800 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 2.8 miles southwest of the Project (EONDX 116585)
Invertebrates				
Branchinechta lynchi vernal pool fairy shrimp	FT/- -/-	Occurs in a variety of vernal pool habitats that range from small, clear pools to large, turbid and alkaline pools; more common in pools less than 0.05 acre, typically as part of larger vernal pool complexes. Adults are active from early December to early May; pools must hold water for at least 18 days, the minimum to complete the life cycle if temperatures are optimal. Eggs are laid in the spring and persist through the dry season as cysts. Current distribution in California includes the Central Valley and coast ranges.	None	Suitable habitat absent. No CNDDB occurrences within 10 miles of the Project.
Danaus plexippus Monarch – California overwintering population	-/- -/-	This butterfly occurs in various open habitats including fields, meadows, weedy areas, marshes, and roadsides. Adults make massive migrations from August to October, flying thousands of miles south to hibernate along the California coast and in central Mexico. The caterpillars feed on plants in the Milkweed family primarily Milkweeds (*Asclepias*), but also other genera including *Calotropis, Cynanchum, Gonolobus, Sarcostemma,* etc.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 8.5 miles north of the Project (EONDX 22801)

Lytta moesta moestan blister beetle	-/- -/-	Previously a California Species of Special Concern. Often found on flowers of native plant species; may be associated with dried vernal pools. Distribution not well understood but known from the Central Valley, from Contra Costa County to Tulare and Kern Counties.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 9.7 miles northeast of the Project (EONDX 64442).
Lytta morrisoni Morrison's blister beetle	-/- -/-	Often found on flowers of native plant species and occasionally within dried vernal pools. Little is known of its life history, but its distribution is limited to the Central Valley of California.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 9.7 miles northeast of the Project (EONDX 64450).
Mollusks				
Helminthoglypta callistoderma Kern shoulderband	-/- -/-	This land snail, a terrestrial pulmonate gastropod, is a species that occurs in freshwater waterbodies. It is found along the lower Kern River canyon in the Kern River.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 7.3 miles northwest of the Project (EONDX 23090)
Fish				
Hypomesus transpacificus delta smelt	FT/SE -/-	Small fish endemic to the San Francisco Estuary and the larger Sacramento-San Joaquin Delta. Moves between freshwater and low-salinity water throughout the year; most spawning happens in tidally influenced backwater sloughs and channel edgewaters. Historical distribution did not extend beyond Mossdale on the San Joaquin River and Sacramento on the Sacramento River.	None	Suitable habitat absent and no CNDDB occurrences within 10 miles of the Project.
Amphibians				
Lithobates pipiens northern leopard frog	-/- -/SSC	Highly aquatic species preferring permanent waters with abundant aquatic vegetation. Found in freshwater marshes, great basin flowing and standing waters, swamps, wet meadows, wetlands, canals, and	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 7.8 miles northeast of the Project (EONDX 74696), from an agricultural canal in 1956.

		reservoirs at elevations up to 11,000 feet. The species is native to northern California, but most native populations are extinct; populations have been introduced in other locations throughout California, as they are used in laboratories and commercially for human consumption, and may have expanded their range via man-made waterways.		
Rana draytonii California red-legged frog	FT/- -/SSC	Occurs primarily in and near ponds in forests, woodlands, grasslands, coastal scrub, and stream sides with plant cover; mostly in lower elevations; breeding habitat may be permanent or ephemeral; estivates in animal burrows or other moist refuges when ephemeral habitat is dry; endemic to California and northern Baja California; found throughout coastal California from Mendocino County south; inland distribution includes northern Sacramento Valley and foothills of Sierra Nevada south to Tulare County (possibly Kern County); elevation from sea level to 5,000 feet.	None	Suitable freshwater and upland habitat absent from the Project. There are no recorded CNDDB occurrences for this species within 10 miles of the Project.
Spea hammondii western spadefoot	-/- -/SSC	Species relies on vernal pools for breeding where predators cannot become established; open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland river floodplains, alkali flats, foothills, and mountains; endemic to California and northern Baja California; distribution from Redding south throughout Central Valley and foothills, throughout South Coast Ranges into coastal southern California	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 10 miles northeast of the Project (EONDX 30651) and is most likely extirpated.

		to Transverse mountains and Peninsular mountains; elevation from sea level to 4,500 feet.		
Reptiles				
Anniella sp. California legless lizard	-/- -/SSC	Occurs in a variety of habitats, generally in moist, loose soils. Not all documented *Anniella* populations have been assigned a species designation and are recorded under genus only.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 4.8 miles south of the Project (EONDX 106920).
Anniella grinelli Bakersfield legless lizard	-/- -/SSC	Occurs in moist warm loose soil with plant cover, such as pine-oak woodland scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 6.7 miles northwest of the Project (EONDX 106892).
Arizona elegans occidentalis California glossy snake	-/- -/SSC	Appears to prefer microhabitats of open areas with soil loose enough for easy burrowing. Inhabits arid scrub, rocky washes, grasslands and chaparral.	None	Low quality habitat present, but not contiguous with any suitable habitat. CNDDB occurrence from 1946 overlaps with Project (EONDX 105514), but habitat has been developed and severely degraded since.
Gambelia sila Blunt-nosed leopard lizard	FE/SE -/FP	Occurs in semiarid habitats within the southern Central Valley and Cuyama Valley; habitats typically are flat and have large open areas with scattered shrubs for refuge; uses small mammal burrows for shelter; spends most of year underground, surfacing in spring/early summer to breed and eat; hatchlings surface in fall to eat; may interbreed with long-nosed leopard lizard in Cuyama Valley; threatened by habitat loss/fragmentation and drought; elevation from 100-2,400 feet.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 9.4 miles west of the Project (EONDX 27824).
Masticophis flagellum ruddocki San Joaquin Coachwhip	-/- -/SSC	Inhabits open, dry habitats with little to no tree cover in the San Joaquin Valley, generally on level terrain.	None	Suitable habitat present, but not contiguous with suitable or occupied habitat. Nearest CNDDB occurrence

		Found in valley grassland and saltbush scrub with small mammal burrows, which it uses for refuge and to lay eggs.		is approximately 9.5 miles west of the Project (EONDX 66207).
Thamnophis giga giant garter snake	FT/ST -/-	Highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches; prefers vegetation close to water for basking; does not venture more than 200 feet from aquatic habitat; elevation from sea level to 400 feet; endemic to California; currently ranges from Glenn County to southern edge of San Francisco Bay Delta, and from Merced County to northern Fresno County.	None	Suitable habitat absent. There are no CNDDB occurrences within 10 miles.
Birds				
Agelaius tricolor *tricolored blackbird*	-/ST -/SSC	Colonial breeder that prefers freshwater, emergent wetlands with tall, dense cattails or tules, but also thickets of willow, blackberry, wild rose, and tall herbs; breeding colonies are minimum ~50 pairs; forages in pastures, grain fields, and similar habitats near breeding areas. Occurs in densely vegetation valley and foothill grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes; favors native grasslands with a mix of grasses, forbs and scattered shrubs; loosely colonial when nesting; summer resident and breeding in west of Cascade-Sierra Nevada crest from Mendocino to Trinity counties, south to San Diego County; largely insectivorous.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 4.8 miles southeast of the Project (EONDX 99242).
Ardea alba *great egret*	-/- -/-	Found in estuaries, freshwater and brackish marshes, swamps, riparian forests, and wetlands. Rookeries are	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately

		located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. This species is a colonial nester, building large stick nests in large trees or islands in lakes, lagoons, and estuaries.		3.1 miles southeast of the Project (EONDX 11975).
Athene cunicularia burrowing owl	BCC/- -/SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Yes	Suitable foraging and nesting habitat present. May burrow in California ground squirrel burrows or San Joaquin kit fox den that are present on-site. Nearest CNDDB occurrence is approximately 1.8 miles southeast of the Project (EONDX 68080)
Buteo swainsoni Swainson's hawk	-/ST -/-	Occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley; hawks may be resident or migrant; breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; also observed breeding in large eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture; may nest on ground if no suitable trees are available; nests are platform of sticks, bark, and fresh leaves at or near top of trees; breeds from late March to late August; forages in grassland, open scrub, and grain fields, primarily for rodents.	Yes	Suitable foraging habitat present on the Project and suitable nesting habitat in the vicinity. Nearest CNDDB occurrence is approximately 2.1 miles south of the Project (EONDX 115317).
Charadrius montanus mountain plover	BCC/- -/SSC	Migratory shorebird that breeds in central United States and winters in southwest North America, including the Central Valley of California. Unlike most shorebirds this species is not found near coasts or bodies of water. Preferred habitats include shortrgrass prairie, dry lowland areas, plowed fields, and bare soil. Eggs are laid	None	Suitable habitat absent. No CNDDB occurrences within 10 miles of the Project.

		directly on the ground in a depression, sometimes lined with grasses.		
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE -/-	Nests in dense willow thickets in riparian forests, often mixed with cottonwoods, with a thick understory of brambles and vines including blackberry, nettles, and wild grape. The species is migratory and generally winters in woody lowland vegetation near freshwater. Populations numbers plummeted during the 20th century, as native riparian habitat was lost due to water diversion, groundwater pumping, and conversion to agriculture and urban development.	None	Suitable habitat absent. No CNDDB occurrences within 10 miles of the Project.
Egretta thula Snowy egret	-/- -/-	Occupies a variety of habitats, feeds in many types of permanently and seasonally flooded wetlands, lakes, swamps, and man-made habitats.	None	Suitable habitat absent. Nearest CNDDB occurrence is approximately 3 miles southwest of the Project (EONDX 11976)
Empidonax traillii extimus southwestern willow flycatcher	FE/SE -/-	Small migratory passerine that breeds in patches of riparian habitat in the American southwest and winters from Mexico to northern South America. Nests in dense riparian vegetation, usually willows but also other trees and shrubs such as a tamarisk, near surface water or saturated soil. Numbers have plummeted due to loss of riparian habitat, similar to the western yellow-billed cuckoo.	None	Suitable habitat absent. No CNDDB occurrences within 10 miles of the Project.
Mammals				
Ammospermophilus nelson San Joaquin ground squirrel		Occurs in saltbush scrub and grassland habitats; prefers washes and open shrub areas with sandy soils; threatened by habitat loss and population fragmentation from agricultural development,	None	Suitable habitat absent. No CNDDB occurrences within 10 miles of the Project.

		urbanization, petroleum extraction, and excessive cattle grazing.		
Dipodomys ingens Giant kangaroo rat	FE/SE -/-	Found in annual grasslands in the western San Joaquin Valley, and in sparsely vegetated alkali scrub. Prefers generally flat terrain, and loose soils for burrowing.	None	Habitat is suitable but not contiguous with suitable or occupied habitat. Nearest CNDDB occurrence is approximately 9.7 miles southwest of the Project.
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE -/-	Inhabits arid-land vegetative communities on level terrain within the floor of the Tulare Basin. Habitat consists of grassland, often interspersed with shrubs. This species tends to prefer soft, powdery soils with higher salinity to burrow. Current distribution is limited to scattered, isolated clusters west of Tipton, Pixley, and Earlimart and in areas in southern Kern County.	None	Habitat is suitable but not contiguous with suitable or occupied habitat. Nearest CNDDB occurrence is from 2015 and approximately 7.2 miles southeast of the Project (CNDDB 14581).
Eumops perotis Western mastiff bat	-/- -/SSC	Found in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	None	Suitable roosting habitat absent. Nearest CNDDB occurrence is approximately 6.7 miles north of the Project (EONDX 66520)
Lasiurus cinereus Hoary bat	-/- -/-	Over its extensive range, can be found in a variety of habitat types, from deserts to tropical forests. It generally hunts around treetops, along streams and lakes, and in densely vegetated urban areas.	None	Suitable roosting habitat absent. Nearest CNDDB occurrence is approximately 8.7 miles northwest of the Project (EONDX 66520), from 1894.
Sorex ornatus relictus Buena Vista Lake shrew	FE/- -/SSC	This species occurs in areas with a dense mesophytic, cover and an abundant layer of litter. Historically, it occupied Valley Freshwater Marsh near Buena Vista Lake. It has been identified in areas with dense wetland vegetative cover and an abundant layer of detritus.	None	Suitable habitat absent. No CNDDB records within 10 miles.

Taxidea taxus American badger	-/- -/SSC	Occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils; feeds mostly on fossorial rodents; digs burrows for cover and reproduction; can dig new den each night; litters born mostly in March and April; somewhat tolerant of human activities but avoids cultivated agricultural habitats.	Yes	Suitable habitat present, although generally not contiguous with suitable habitat. Nearest CNDDB occurrence is approximately 10 miles northeast of the Project (EONDX 74778).
Vulpes macrotis mutica San Joaquin kit fox	FE/SE -/-	Occurs in arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils; highly adaptable and documented in urban developed areas. Uses dens year-round; needs loose-textured sandy soils for burrowing and will use man-made structures such as culverts. Preys mainly on small mammals and will also scavenge for human food.	Present	Suitable habitat is present, and a natal den is on the Project.

CRPR (California Rare Plant Rank):
- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:
- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Fairly endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened)

FE	Federally Endangered
FT	Federally Threatened
FC	Federal Candidate Species
BCC	Federal Bird of Conservation Concern
SE	State Endangered
ST	State Threatened
SC	State Candidate
SS	State Sensitive
SSC	State Species of Special Concern
SFP	State Fully Protected
DL	Delisted
WL	Watch List

APPENDIX E

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE (USFWS 2011)

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

PHASE I CULTURAL RESOURCES SURVEY, KARPE DEVELOPMENT PROJECT, KERN COUNTY, CALIFORNIA

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MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for the Karpe Development Project, Kern County, California. The Project area is located within the City of Bakersfield in Section 31 (T30S/R28E; MDBM), Kern 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 on 5 August 2019 at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. These investigations determined that the study area had not been previously surveyed and that no cultural resources are known to exist within in.

The Phase I survey fieldwork was conducted on 5 November 2019 with parallel transects spaced at 15-meter intervals walked along the approximately 20-acres (ac) study area. No cultural resources of any kind were discovered. Based on these results, the Karpe Development Project does not have the potential to result in significant impacts to historical resources, and no additional archaeological work is recommended.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc., was retained by Insight Quad Knopf, Inc., Bakersfield, California, to conduct an intensive Phase I cultural resources survey for the Karpe Development Project, Kern County, California. The Project is located within the City of Bakersfield, Kern County, California (Figure 1). The study was undertaken to assist with compliance with the California Environmental Quality Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources or historic properties do not occur as a result of project construction.

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, and Tim Polkinghorne, B.A, ASM Assistant 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 consultation; 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 AND DESCRIPTION

The Karpe Development Project is located in the southeast portion of metropolitan Bakersfield. The proposed Project site consists of a roughly rectangular parcel bordered to the west by South H Street, to the south by Taft Highway, and to the east and north by undeveloped land. This places the project area on the open flats of the San Joaquin Valley. Elevation within the project area, which is flat, is approximately 334-ft above mean sea level (amsl). This location currently consists of fallow agricultural fields and is vacant.

Lane Engineers, Inc. proposes the development of this land for commercial use as a service station, to include a convenience store, fast food restaurant, maintenance building, fueling stations, surface parking, fuel storage facilities, at-grade and subgrade utilities, storm water retention basin, and landscape improvements.

The proposed Project is generally located in the southeast portion of metropolitan Bakersfield in Section 14, Township 30S, Range 28E (MDBM). The Project will involve the construction of a service station (i,e. retail fueling center, convenience store, restaurant, drainage infrastructure,

utilities, etc.). The land in currently in active agricultural production and is surrounded by undeveloped land to the north and east, and paved roads on the west (South H Street) and south (Taft Highway).

All construction, staging, and lay-down areas for the project will occur within the approximately 20-acres Project study area.

1.2 REGULATORY CONTEXT

1.2.1 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.

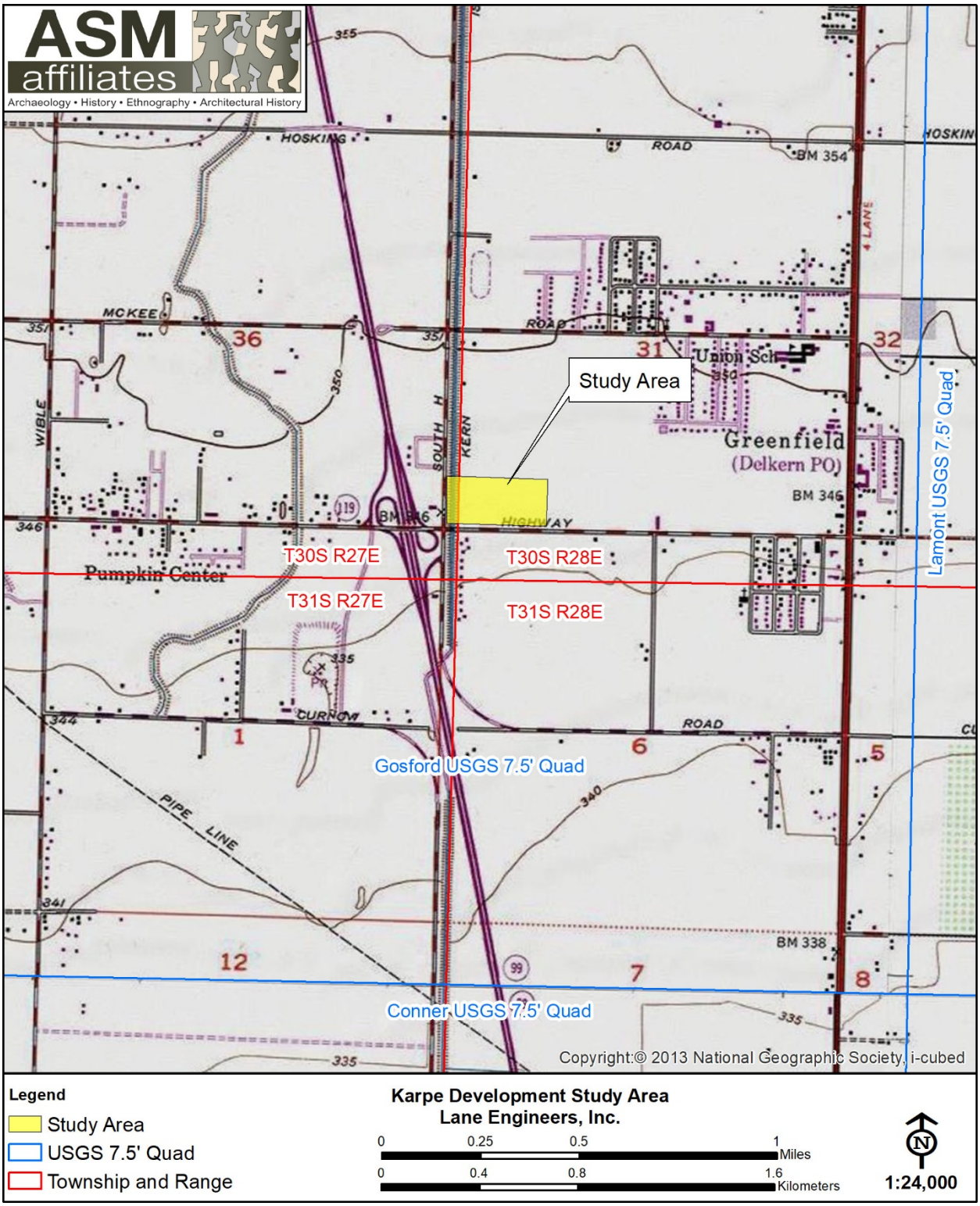


Figure 1. Location of the Karpe Development Project, Kern County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the study area is located at an elevation range of approximately 334-ft above mean sea level (amsl) on the open flats of the San Joaquin Valley, within the City of Bakersfield. The study area is situated less than 8-miles south-southeast of the Kern River and approximately 7-miles north-northeast of the Kern Lakebed. The Kern River is a seasonal river that ultimately drains into the now dry Tulare Lakebed.

Historical and recent land-use has changed the vegetation that was once present within and near the study area. Prior to development in the 19th century, however, this most likely included the Valley Grassland community and, depending seasonal storm systems, possible freshwater marshes (see Schoenherr 1992). 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 developed for many years and no native vegetation is present.

According to the geoarchaeological model developed by Meyer et al. (2010), the study area has a very high potential for buried archaeological deposits. Buried sites and cultural resources therefore potentially may be present.

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 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.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. The San Joaquin Valley floor, and thus the study area, was occupied by these southern

Valley Yokuts speakers, themselves divided into a series of autonomous "tribelets," the boundaries of which are not well defined. The Yauelmani Yokuts lived from the Kern River area, in modern Bakersfield, to the southeast corner of the valley, on the Tejon Ranch, thus likely including the study area. The Hometwali were centered around Kern Lake, while the Tulamni occupied the west side of Buena Vista Lake and the foothills of the Temblors, at least to McKittrick. The Tuhohi resided from the Kern River delta north to the Goose Lake area and west to the sloughs near Buttonwillow. Yokuts villages apparently extended up to, but not into, the mouths of the canyons on the northern and western fronts of the Tehachapi Mountains, well into the foothills and lower elevations of the Sierra Nevada on the east, and to the crest of the Temblor Range on the west. The Yokuts are Penutian speakers, and are linguistically related to northern occupants of the San Joaquin Valley.

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 east 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 south 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 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 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 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).

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 where their descendants live today (Boyd 1997). With the end of World War II, an economic boom developed, reviving the local economy and bringing even more people into the Bakersfield area.

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 associate 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 Karpe Development Project 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 5 August 2019. 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 search (Confidential Appendix A), no previous studies have been conducted within the study area and no cultural resources of any kind are known to exist within it. An additional ten (10) previous studies had been completed within 0.5-mi of the study area (Table 1), resulting in the recording of a historic single-family residence (P-15-008115) within that radius.

Based on the records search results, the study area appeared to have low archaeological sensitivity.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventor/Phase I survey of the Karpe Development Project study area was conducted by Robert Azpitarte, B.A., ASM Associate Archaeologist, on 5 November 2019. 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 and the BLM 8100 Manual, using DPR 523 forms.

The project study area consists of flat and fallow agricultural fields. The pedestrian survey covered the proposed Project study area in its entirety. Areas of denser vegetation were examined purposively and opportunistically to determine whether they contained cultural resources, using narrower transects, and with particular attention paid to rodent burrow spoils piles, cut-banks, cleared edges of disturbed areas, and other spots with better ground surface visibility. Ground surface visibility was good, and adequate for intensive Phase I inventory standards

4.2 SURVEY RESULTS

The study area is within undeveloped, fallow agricultural fields (Figure 2 and 3) surrounded by undeveloped private land and residential areas of suburban southeast Bakersfield. Vegetation within the study area consisted mostly of dry grasses and brome. Special attention was therefore paid to any exposed ground surface areas, rodent burrow spoils piles, cut-banks, cleared edges of disturbed areas, and other spots with better ground surface visibility. The bordering rights-of-way of Taft Highway and South H Street were also investigated. Modern trash dumps, including piles of concrete rubble, were noted within the study area, suggesting repeated disturbance (see Figure 3).

No cultural resources of any kind were identified within the Karpe Development Project study area.



Figure 2. Overview of proposed Karpe Development Project study area, looking northwest.



Figure 3. Overview of proposed Karpe Development Project study area, looking southeast. Note modern refuse dumping near western boundary.

5. SUMMARY AND RECOMMENDATIONS

An intensive Class III archaeological inventory/Phase I survey was conducted for the Karpe Development Project, located within the southeast area of metropolitan Bakersfield, Kern 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 Phase I survey fieldwork was conducted on 5 November 2019, with parallel transects spaced at 15-meter intervals walked across the entire 20-acres study area and abutting paved roads rights-of-way. No new historical or archaeological resources of any kind were identified within the study area.

5.1 RECOMMENDATIONS

An intensive Phase I cultural resources survey demonstrated that the Karpe Development Project study area lacks cultural resources of any kind. The proposed project therefore does not have the potential to result in adverse impacts to significant historical resources. 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

FIRSTCARBONSOLUTIONS™

Noise Impact Analysis Report
Karpe Development Project
City of Bakersfield, Kern County, California

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Date: November 4, 2019

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
ADT	average daily traffic
ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibel
FCS	FirstCarbon Solutions
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GPA	General Plan Amendment
in/sec	inch per second
L_{dn}	day-night average sound level
L_{eq}	equivalent continuous sound level
L_{max}	maximum noise/sound level
OSHA	Occupational Safety and Health Administration
PPV	peak particle velocity
rms	root mean square
SEL	Single Event Level
VdB	vibration in decibels

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SECTION 1: INTRODUCTION

1.1 - Purpose of Analysis and Study Objectives

This Noise Impact Analysis Report has been prepared by FirstCarbon Solutions (FCS) to determine the off-site and on-site noise impacts associated with the proposed Karpe Development Project (project). The following is provided in this report:

- A description of the study area, project site, and proposed project
- Information regarding the fundamentals of noise and vibration
- A description of the local noise guidelines and standards
- A description of the existing noise environment
- An analysis of the potential short-term, construction-related noise and vibration impacts from the proposed project
- An analysis of long-term, operations-related noise and vibration impacts from the proposed project

1.2 - Project Summary

1.2.1 - Site Location

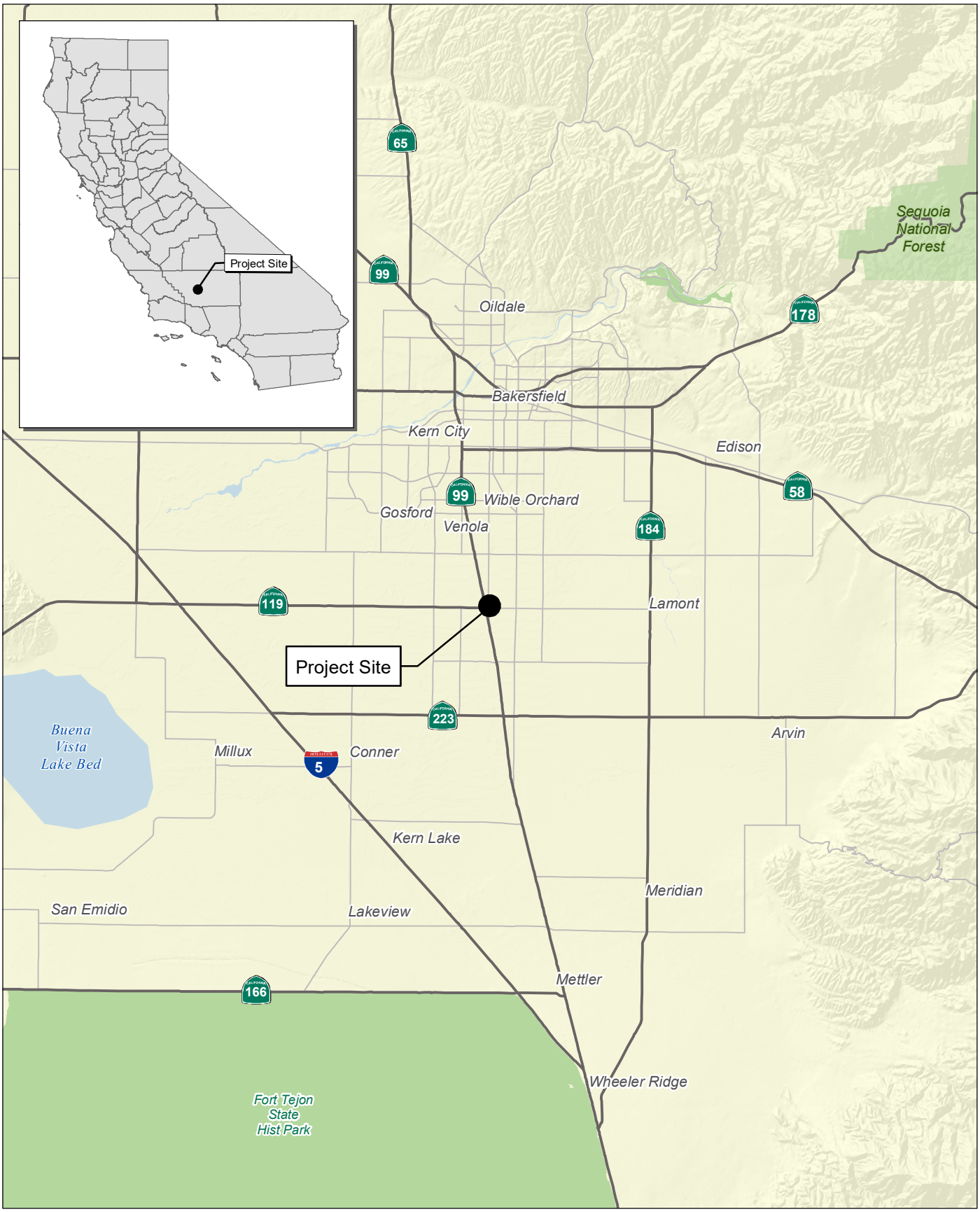
The proposed project is located in the City of Bakersfield, in Kern County, California (Exhibit 1). The 20.55-acre site is located in the northeast quadrant of State Route (SR)-119 (Taft Highway) and H Street. The project site is located on two vacant parcels. Surrounding the project site is vacant land to the north and east, a mobile home park to the southeast, mobile home sales and RV storage to the south, and a commercial land use to the west. Regional access to the project site is provided via SR-99 through the Taft Highway interchange, located to the south of the project site. Local access to the project site is provided via Taft Highway and H Street (Exhibit 2).

1.2.2 - Project Description

The Applicant proposes to construct an 11,166-square-foot convenience store space, 3,485-square-foot fast food space with drive thru, and a 3-bay 10,992-square-foot maintenance building on the project site. The project would include a total of 177 parking stalls, with 78 auto parking stalls, 94 truck parking stalls, and 5 RV parking stalls. The project would also include fueling islands (16 auto fueling positions and 8 truck fueling positions), above and below ground diesel storage tanks, dog park areas, and bioretention areas. Associated landscaping would total 121,151 square feet.[1] The tentative site plan is shown in Exhibit 3.

[1] Lane Engineers, Inc. 2019. Karpe Development Site Plan Map.

The primary activities that will be performed on site will be travelers (auto and truck) stopping to fuel, rest, and/or eat. The proposed project will be open and operational 24-hours, 7-days per week. The on-site maintenance building will provide light service to over the road trucks, including repairing and replacing truck tires, and performing light maintenance (e.g., air filters, wiper blades, oil, and other fluid changes); no major engine repairs or major services will be performed on the site. It is anticipated that there will be approximately 450 truck visits and approximately 900 auto visits to the site per day. It is also anticipated that there will be approximately 1–3 small deliveries per day for the convenience store, and approximately 2 deliveries per week for the restaurants.



Source: Census 2000 Data, The CaSIL

FIRSTCARBON SOLUTIONS™

5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

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KARPE DEVELOPMENT PROJECT
NOISE IMPACT ANALYSIS

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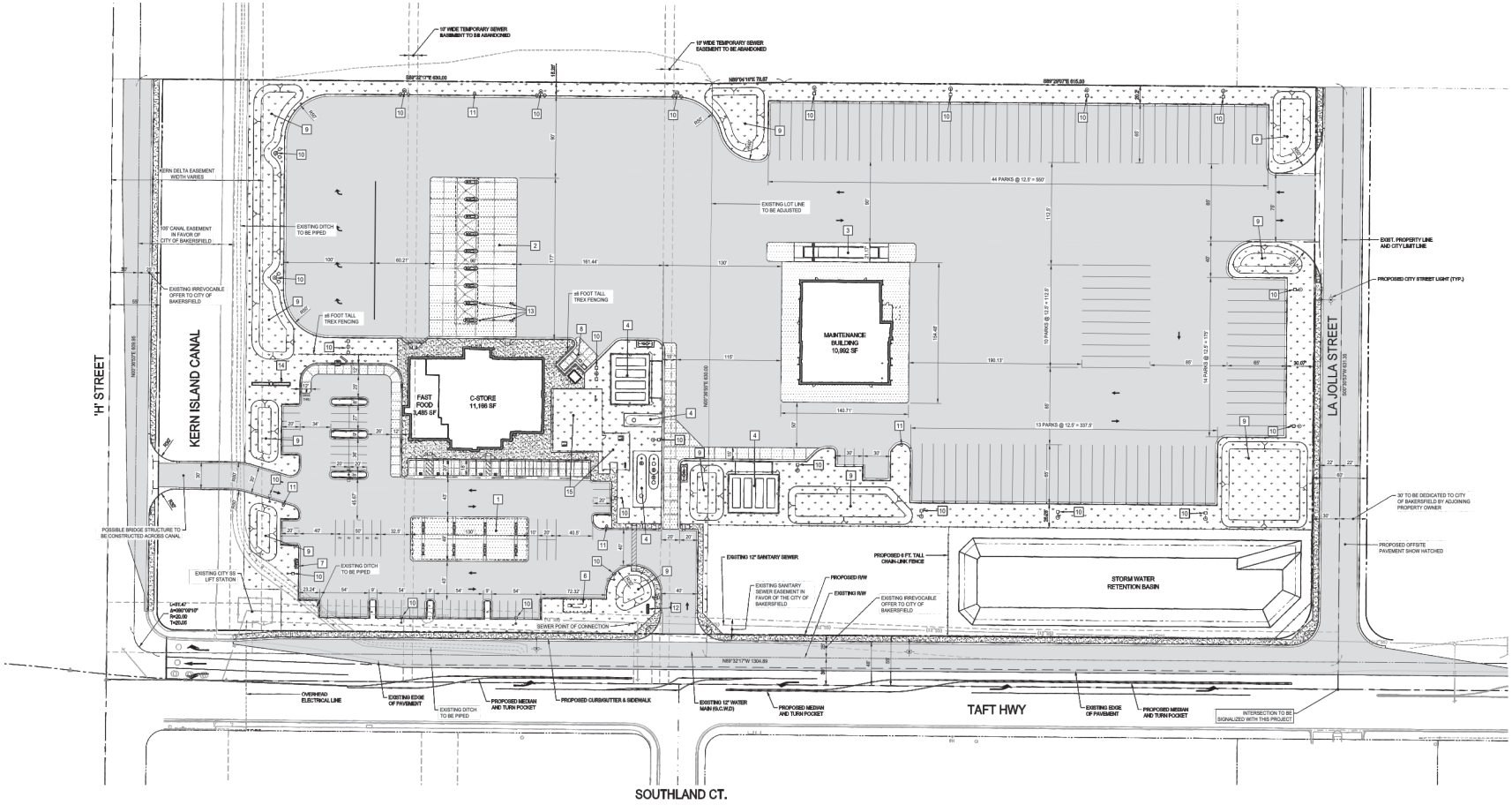
Source: ESRI Aerial Imagery.

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1,000 500 0 1,000 Feet

Exhibit2
Local Vicinity Map
Aerial Base

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PARKING ANALYSIS

BUILDING	BUILDING SIZE	PARKING CRITERIA	PARKING REQUIRED	PARKING PROVIDED
C-STORE	11,166 SF	1 SPACE PER EACH 200 SF	55.83	
BRANDED FAST FOOD WITH DRIVE THRU	3,485 SF	1 SPACE PER EACH 75 SF	46.47	
MECHANIC'S BUILDING	10,992 SF	1 SPACE PER EACH 600 SF	21.98	N/A
AUTO PARKING			-	78
TRUCK PARKING			-	94
RV PARKING			-	5
TOTAL PARKING			124.28	177
ACCESSIBLE PARKING			4	4

PARKING NOTES:
1. TRUCK PARKING STALLS AND RV PARKING STALLS ARE INCLUDED IN PARKING ANALYSIS
2. ALL AUTO PARKING STALLS ARE MINIMUM 9' WIDE X 20' LONG
3. ALL AUTO DRIVE AISLES ARE MINIMUM 26' WIDE
4. ALL TRUCK PARKING STALLS ARE MINIMUM 12.5' WIDE X 65' LONG
5. ALL TRUCK DRIVE AISLES ARE MINIMUM 65' WIDE

PROJECT INFORMATION

PROJECT NAME:	KARPE DEVELOPMENT
ADDRESS:	NORTHEAST CORNER OF TAFT HWY & 'H' STREET
APN:	517-05-08 & 09
FLOOD ZONE:	'X' UNSHADED
PROPERTY OWNER:	ELMER F. KARPE, INC.
NET PROJECT AREA:	XX ACRES
PROPOSED LANDSCAPING AREA:	121,151 SF

KEYNOTES:

1. AUTO FUELING ISLAND
2. TRUCK FUELING ISLAND
3. TRUCK SCALE
4. ABOVE GROUND DIESEL STORAGE TANKS
5. BELOW GROUND STORAGE TANKS
6. PROPANE TANK
7. DUMP STATION
8. 8' TALL TRASH ENCLOSURE AND UTILITY YARD
9. BIORETENTION LOCATION
10. ON-SITE LIGHT
11. FIRE HYDRANT
12. PROJECT STREET SIGN
13. TRUCK AIR STATION
14. 120' TALL, 1,000 SF POLE-MOUNTED HIGH-RISE SIGN
15. DOG PARK W/ 4' TALL CHAIN-LINK FENCING ALL AROUND

LEGEND:

- PROPOSED A.C. PAVEMENT
- PROPOSED CONC. PAVEMENT
- PROPOSED CONC. SIDEWALK
- PROPOSED LANDSCAPING
- STREET CENTERLINE
- PROPOSED STREET R/W
- EXISTING STREET R/W

NORTH

GRAPHIC SCALE

50 0 25 50 100

1 INCH = 50 FT.

Source: Lane Engineers Inc.

FIRSTCARBON SOLUTIONS™

Exhibit 3
Site Plan

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SECTION 2: NOISE AND VIBRATION FUNDAMENTALS

2.1 - Characteristics of Noise

Noise is generally defined as unwanted or objectionable sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment. Noise effects can be caused by pitch or loudness. *Pitch* is the number of complete vibrations or cycles per second of a wave that result in the range of tone from high to low; higher-pitched sounds are louder to humans than lower-pitched sounds. *Loudness* is the intensity or amplitude of sound.

Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit, which expresses the ratio of the sound pressure level being measured to a standard reference level. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Only audible changes in existing ambient or background noise levels are considered potentially significant.

The human ear is not equally sensitive to all frequencies within the audible sound spectrum, so sound pressure level measurements can be weighted to better represent frequency-based sensitivity of average healthy human hearing. One such specific “filtering” of sound is called “A-weighting.” A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear. Because decibels are logarithmic units, they cannot be added or subtracted by ordinary arithmetic means. For example, if one noise source produces a noise level of 70 dB, the addition of another noise source with the same noise level would not produce 140 dB; rather, they would combine to produce a noise level of 73 dB.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level. Noise levels diminish or attenuate as distance from the source increases based on an inverse square rule, depending on how the noise source is physically configured. Noise levels from a single-point source, such as a single piece of construction equipment at ground level, attenuate at a rate of 6 dB for each doubling of distance (between the single-point source of noise and the noise-sensitive receptor of concern). Heavily traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly at a rate of 3 dB per doubling of distance.

2.1.1 - Noise Descriptors

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

2.1.2 - Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, as well as ground absorption, atmospheric conditions (wind, temperature gradients, and humidity) and refraction, and shielding by natural and manmade features. Sound from point sources, such as an air conditioning condenser, a piece of construction equipment, or an idling truck, radiates uniformly outward as it travels away from the source in a spherical pattern.

The attenuation or sound drop-off rate is dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA per each doubling of the distance (dBA/DD) is typically observed over soft ground with landscaping, as compared with a 6 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources, such as traffic noise on a roadway, a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3 dBA/DD drop-off rate for hard-site conditions. Table 1 briefly defines these measurement descriptors and other sound terminology used in this section.

Table 1: Sound Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which represents the squared ratio of sound-pressure amplitude to a reference sound pressure. The reference pressure is 20 micropascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (nighttime).
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.
Source: Data compiled by FCS 2018	

2.1.3 - Traffic Noise

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the Federal Highway

Administration (FHWA) community noise assessment criteria, this change is "barely perceptible." For reference, a doubling of perceived noise levels would require an increase of approximately 10 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

2.1.4 - Stationary Noise

A stationary noise producer is any entity in a fixed location that emits noise. Examples of stationary noise sources include machinery, engines, energy production, and other mechanical or powered equipment and activities such as loading and unloading or public assembly that may occur at commercial, industrial, manufacturing, or institutional facilities. Furthermore, while noise generated by the use of motor vehicles over public roads is preempted from local regulation, the use of these vehicles is considered a stationary noise source when operated on private property such as at a construction site, a truck terminal, or warehousing facility.

The effects of stationary noise depend on factors such as characteristics of the equipment and operations, distance and pathway between the generator and receptor, and weather. Stationary noise sources may be regulated at the point of manufacture (e.g., equipment or engines), with limitations on the hours of operation, or with provision of intervening structures, barriers or topography.

Construction activities are a common source of stationary noise. Construction-period noise levels are higher than background ambient noise levels but eventually cease once construction is complete. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on each construction site and, therefore, would change the noise levels as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table 2 shows typical noise levels of construction equipment as measured at a distance of 50 feet from the operating equipment.

Table 2: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Impact Pile Driver	Yes	95
Auger Drill Rig	No	85
Vibratory Pile Driver	No	95
Jackhammers	Yes	85
Pneumatic Tools	No	85
Pumps	No	77
Scrapers	No	85
Cranes	No	85
Portable Generators	No	82

Table 2 (cont.): Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Rollers	No	85
Dozers	No	85
Tractors	No	84
Front-End Loaders	No	80
Backhoe	No	80
Excavators	No	85
Graders	No	85
Air Compressors	No	80
Dump Truck	No	84
Concrete Mixer Truck	No	85
Pickup Truck	No	55
Source: Federal Highway Administration (FHWA). 2006. Highway Construction Noise Handbook. August.		

2.1.5 - Noise from Multiple Sources

Because sound pressure levels in decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. Therefore, sound pressure levels in decibels are logarithmically added on an energy summation basis. In other words, adding a new noise source to an existing noise source, both producing noise at the same level, will not double the noise level. Instead, if the difference between two noise sources is 10 dBA or more, the louder noise source will dominate and the resultant noise level will be equal to the noise level of the louder source. In general, if the difference between two noise sources is 0–1 dBA, the resultant noise level will be 3 dBA higher than the louder noise source, or both sources if they are equal. If the difference between two noise sources is 2–3 dBA, the resultant noise level will be 2 dBA above the louder noise source. If the difference between two noise sources is 4–10 dBA, the resultant noise level will be 1 dBA higher than the louder noise source.

2.2 - Characteristics of Groundborne Vibration and Noise

Groundborne vibration consists of rapidly fluctuating motion through a solid medium, specifically the ground, that has an average motion of zero and in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The effects of groundborne vibration typically only causes a nuisance to people, but in extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and

only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room, and may also consist of the rattling of windows or dishes on shelves.

Several different methods are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels—denoted as LV—and is based on the reference quantity of 1 micro inch per second. To distinguish these vibration levels referenced in decibels from noise levels referenced in decibels, the unit is written as "VdB."

Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. When assessing annoyance from groundborne vibration, vibration is typically expressed as rms velocity in units of decibels of 1 micro-inch per second, with the unit written in VdB. Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. Human perception to vibration starts at levels as low as 67 VdB. Annoyance due to vibration in residential settings starts at approximately 70 VdB.

Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration. Construction activities, such as blasting, pile driving and operating heavy earthmoving equipment, are common sources of groundborne vibration. Construction vibration impacts on building structures are generally assessed in terms of PPV. Typical vibration source levels from construction equipment are shown in Table 3.

Table 3: Vibration Levels of Construction Equipment

Construction Equipment	PPV at 25 Feet (inches/second)	rms Velocity in Decibels (VdB) at 25 Feet
Water Trucks	0.001	57
Scraper	0.002	58
Bulldozer—small	0.003	58
Jackhammer	0.035	79
Concrete Mixer	0.046	81
Concrete Pump	0.046	81
Paver	0.046	81
Pickup Truck	0.046	81
Auger Drill Rig	0.051	82
Backhoe	0.051	82
Crane (Mobile)	0.051	82
Excavator	0.051	82
Grader	0.051	82

Table 3 (cont.): Vibration Levels of Construction Equipment

Construction Equipment	PPV at 25 Feet (inches/second)	rms Velocity in Decibels (VdB) at 25 Feet
Loader	0.051	82
Loaded Trucks	0.076	86
Bulldozer—Large	0.089	87
Caisson drilling	0.089	87
Vibratory Roller (small)	0.101	88
Compactor	0.138	90
Clam shovel drop	0.202	94
Vibratory Roller (large)	0.210	94
Pile Driver (impact-typical)	0.644	104
Pile Driver (impact-upper range)	1.518	112
Source: Compilation of scientific and academic literature, generated by the Federal Transit Administration (FTA) and FHWA.		

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the earth, which may contain significant geological differences. Factors that influence groundborne vibration include:

- **Vibration source:** Type of activity or equipment, such as impact or mobile, and depth of vibration source;
- **Vibration path:** Soil type, rock layers, soil layering, depth to water table, and frost depth; and
- **Vibration receiver:** Foundation type, building construction, and acoustical absorption.

Among these factors that influence groundborne vibration, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface, and can result in groundborne vibration problems at large distance from the source. Factors such as layering of the soil and depth to the water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-

waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil type, but it has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests. The vibration level (calculated below as PPV) at a distance from a point source can generally be calculated using the vibration reference equation:

$$PPV = PPV_{ref} * (25/D)^n \text{ (in/sec)}$$

Where:

PPV_{ref} = reference measurement at 25 feet from vibration source
D = distance from equipment to property line
n = vibration attenuation rate through ground

According to Section 7 of the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual, an "n" value of 1.5 is recommended to calculate vibration propagation through typical soil conditions.[2]

[2] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

SECTION 3: REGULATORY SETTING

3.1 - Federal Regulations

3.1.1 - United States Environmental Protection Agency

In 1972, Congress enacted the Noise Control Act. This act authorized the United States Environmental Protection Agency (EPA) to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels) categories, as shown in Table 4. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an $L_{eq(24)}$ of 70 dBA. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

Table 4: Summary of EPA Recommended Noise Levels to Protect Public Welfare

Effect	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Note:
(24) signifies an L_{eq} duration of 24 hours.
Source: United States Environmental Protection Agency. 1978. Protective Noise Levels, EPA 550/9-79-100. November.

3.1.2 - Federal Transit Administration

The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact Assessment

Manual.[3] The FTA guidelines include thresholds for construction vibration impacts for various structural categories as shown in Table 5.

Table 5: Federal Transit Administration Construction Vibration Impact Criteria

Building Category	PPV (in/sec)	Approximate VdB
I. Reinforced—Concrete, Steel or Timber (no plaster)	0.5	102
II. Engineered Concrete and Masonry (no plaster)	0.3	98
III. Non Engineer Timber and Masonry Buildings	0.2	94
IV. Buildings Extremely Susceptible to Vibration Damage	0.12	90

Note:
VdB = vibration measured as rms velocity in decibels of 1 micro-inch per second
Source: Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

3.2 - State Regulations

The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. Referred to as the "State Noise Insulation Standard," it requires buildings to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the receptor. State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are found in the California Code of Regulations, Title 24 (known as the Building Standards Administrative Code), Part 2 (known as the California Building Code), Appendix Chapters 12 and 12A. For limiting noise transmitted between adjacent dwelling units, the noise insulation standards specify the extent to which walls, doors, and floor-ceiling assemblies must block or absorb sound. For limiting noise from exterior noise sources, the noise insulation standards set an interior standard of 45 dBA CNEL in any habitable room with all doors and windows closed. In addition, the standards require preparation of an acoustical analysis demonstrating the manner in which dwelling units have been designed to meet this interior standard, where such units are proposed in an area with exterior noise levels greater than 60 dBA CNEL.

The proposed project does not include any type of residential development. Therefore, these standards are not applicable to the proposed project. However, the State has established land use compatibility guidelines for determining acceptable noise levels for specified land uses, including industrial type land uses such as the proposed project, which the City of Bakersfield has adopted as described below.

[3] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

3.3 - Local Regulations

The project site is located within the City of Bakersfield, in Kern County, California. The City of Bakersfield addresses noise in the Noise Element of the Metropolitan Bakersfield General Plan[4] and in the Bakersfield Municipal Code.[5]

3.3.1 - Metropolitan Bakersfield General Plan

The City of Bakersfield establishes land use compatibility standards in the Noise Element of the Metropolitan Bakersfield General Plan. The General Plan Land Use Compatibility Standards for Community Noise Environments are shown in Table 6. The land use category listed in the General Plan Land Use Compatibility Standards that most closely applies to the proposed project is office buildings, business commercial and professional. Under this designation, 70 dBA CNEL is considered to be the "normally acceptable" noise level for this type of new land use development.

Table 6: Land Use Compatibility Standards for Community Noise Environments

Land Use Category	Community Noise Exposure in Decibels (CNEL) or Day/Night Average Noise Level in Decibels (L_{dn})						
	55	60	65	70	75	80	
Residential—Low Density Single-Family, Duplex, Mobile Homes							
Residential—Multi-Family							
Transient Lodging—Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							

[4] City of Bakersfield. 2002. Metropolitan Bakersfield General Plan, Chapter VII: Noise Element. December. Website: http://docs.bakersfieldcity.us/weblink/0/doc/1273241/Page1.aspx. Accessed September 4, 2019.

[5] City of Bakersfield. 2019. Bakersfield Municipal Code, Chapter 9.22 Noise. Website: https://bakersfield.municipal.codes/Code/9.22. Accessed September 4, 2019.

Table 6 (cont.): Land Use Compatibility Standards for Community Noise Environments

Land Use Category	Community Noise Exposure in Decibels (CNEL) or Day/Night Average Noise Level in Decibels (L_{dn})						
	55	60	65	70	75	80	
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	NORMALLY ACCEPTABLE Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.		NORMALLY UNACCEPTABLE New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	CONDITIONALLY ACCEPTABLE New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.		CLEARLY UNACCEPTABLE New construction or development clearly should not be undertaken.

Source: City of Bakersfield. 2002. Metropolitan Bakersfield General Plan, Chapter VII: Noise Element. December. Website: http://docs.bakersfieldcity.us/weblink/0/doc/1273241/Page1.aspx. Accessed September 4, 2019.

The Metropolitan Bakersfield General Plan also establishes exterior noise level performance standards. The exterior noise level standard for daytime hours, between 7:00 a.m. and 10:00 p.m., is 55 dBA L_{50} for a cumulative of 30 minutes in any 1-hour time period. The exterior noise level standard for nighttime hours, between 10:00 p.m. and 7:00 a.m., is 50 dBA L_{50} for a cumulative of 30 minutes in any 1-hour time period. Each of these noise level standards shall be reduced by 5 dBA for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

Bakersfield Municipal Code

The City of Bakersfield Noise Ordinance is codified in Chapter 9.22 of the City's Municipal Code. Section 9.22.050 restricts permissible hours of construction to between the hours of 6:00 a.m. and 9:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 9:00 p.m. on Saturday and Sunday.

SECTION 4: EXISTING NOISE CONDITIONS

The following section describes the existing ambient noise environment of the project vicinity.

4.1 - Existing Ambient Noise Levels

The proposed project site is located within the City of Bakersfield, in Kern County, California. Surrounding the project site is vacant land to the north and east, a mobile home park to the southeast, mobile home sales and RV storage to the south, and a commercial land use to the west. The dominant noise source in the project vicinity is traffic noise from Taft Highway, which runs along the southern boundary of the project site. Traffic noise from SR-99, located approximately 700 feet west of the project site. However, due to distance attenuation, while noise from traffic on SR-99 is audible on the project site, the dominant noise source in the project vicinity is noise from traffic on the Taft Highway immediately adjacent to the project site.

4.2 - Existing Traffic Noise Levels

Existing traffic noise levels along selected roadway segments in the project vicinity were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). Site-specific information is entered, such as roadway traffic volumes, roadway active width, source-to-receiver distances, travel speed, noise source and receiver heights, and the percentages of automobiles, medium trucks, and heavy trucks that the traffic is made up of throughout the day, amongst other variables. The daily traffic volumes were obtained from the traffic analysis prepared for the project by Ruettgers & Schuler Civil Engineers.[6] The traffic volumes described here correspond to the existing without project conditions traffic scenario as described in the transportation analysis. The model inputs and outputs—including the 60 dBA, 65 dBA, and 70 dBA CNEL noise contour distances—are provided in the Appendix of this document. A summary of the modeling results is shown in Table 7.

Table 7: Existing Traffic Noise Levels

Roadway Segment	Approximate ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Taft Highway—H Street to La Jolla Street	9,500	< 50	62	128	64.3
Taft Highway—east of La Jolla Street	9,000	< 50	60	124	64.1
H Street—Taft Highway to SR-99 off ramp	2,700	< 50	< 50	80	62.3
H Street—south of SR-99 off ramp	1,700	< 50	< 50	61	59.3

Notes:
[1] Modeling results do not take into account mitigating features such as topography, vegetative screening, fencing, building design, or structure screening. Rather it assumes a worst case of having a direct line of site on flat terrain.
ADT = average daily traffic
Source: FCS 2019.

[6] Ruettgers & Schuler Civil Engineers. 2019. Traffic Study, Proposed Commercial Development at the Northeast Corner of South H Street & Taft Highway (SR-119). July.

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SECTION 5: THRESHOLDS OF SIGNIFICANCE AND IMPACT ANALYSIS

5.1 - Thresholds of Significance

According to California Environmental Quality Act (CEQA) Guidelines updated Appendix G (2019), to determine whether impacts related to noise and vibration are significant environmental effects, the following questions are analyzed and evaluated.

It should be noted that the significance criteria question (a), below, is from the Land Use and Planning section of the CEQA Guidelines Appendix G checklist questions. However, this question addresses impacts related to conflicts with land use plans, which would include project-related conflicts to the noise land use compatibility standards of the Noise Element of the Metropolitan Bakersfield General Plan. Therefore, these impacts are addressed here.

Would the proposed plan:

a) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

b) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

c) Generate excessive groundborne vibration or groundborne noise levels?

d) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

5.2 - Noise levels that would conflict with any land use plan, policy, or regulation

A significant impact would occur if the project would result in a conflict with the City's adopted land use compatibility standards. The Metropolitan Bakersfield General Plan indicates that for office buildings, business commercial and professional land use developments, environments with ambient noise levels ranging up to 70 dBA CNEL are considered "normally acceptable."

The ambient noise environment of the project site has been documented through traffic noise modeling. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate existing and future traffic noise conditions in the project vicinity. The projected future traffic noise levels adjacent to the project site were analyzed to determine compliance with the City's noise and land use compatibility standards. The daily traffic volumes were obtained from the traffic analysis

prepared for the project by Ruettgers & Schuler Civil Engineers.[7] The resultant noise levels were weighed and summed over a 24-hour period in order to determine the CNEL values. The traffic noise modeling input and output files are included in Appendix A of this document. Table 8 shows a summary of the traffic noise levels for Existing (2019), Existing Plus Project (2019), Opening Year (2021), Opening Year Plus Project (2021), Future Cumulative (2035), and Future Cumulative Plus Project (2035) conditions as measured at 50 feet from the centerline of the outermost travel lane.

Table 8: Traffic Noise Model Results Summary

Roadway Segment	Existing (2019) (dBA) CNEL	Existing Plus Project (2019) (dBA) CNEL	Opening Year (2021) (dBA) CNEL	Opening Year Plus Project (2021) (dBA) CNEL	Future Cumulative (2035) (dBA) CNEL	Future Cumulative Plus Project (2035) (dBA) CNEL
Taft Highway—H Street to La Jolla Street	64.3	65.1	64.6	65.3	64.9	65.6
Taft Highway—east of La Jolla Street	64.1	64.3	64.3	64.6	64.7	64.9
H Street—Taft Highway to SR-99 off ramp	62.3	62.9	62.7	63.2	62.8	63.3
H Street—south of SR-99 off ramp	59.3	59.3	59.3	59.3	59.5	59.5

Note:
Noise levels as measured at 50 feet from the centerline of the outermost travel lane.
Source: FCS 2018.

As shown in Table 8, projected traffic noise levels along Taft Highway between H Street and La Jolla Street, adjacent to the project site, would range up to 65.6 dBA CNEL as measured at 50 feet from the centerline of the outermost travel lane under Future Cumulative Plus Project (2035) conditions.

The nearest façade of the proposed convenience store building to the Taft Highway roadway segment would be located approximately 255 feet from the centerline of the outermost travel lane of Taft Highway. At this distance, traffic noise levels from Taft Highway would attenuate to below 52 dBA CNEL at this building's nearest façade. These noise levels are well below the City's "Normally Acceptable" threshold of 70 dBA CNEL for office buildings, business commercial, and professional land use developments. Therefore, the proposed project would not result in a conflict with the City's land use compatibility standards, which would represent a less than significant impact.

[7] Ruettgers & Schuler Civil Engineers. 2019. Traffic Study, Proposed Commercial Development at the Northeast Corner of South H Street & Taft Highway (SR 119). July.

5.3 - Substantial Noise Increase in Excess of Standards

5.3.1 - Construction Noise Impacts

For purposes of this analysis, a significant impact would occur if construction activities would result in a substantial temporary increase in ambient noise levels outside of the City's permissible hours for construction (6:00 a.m. to 9:00 p.m. on weekdays, and 8:00 a.m. to 9:00 p.m. on weekends) that would result in annoyance or sleep disturbance of nearby sensitive receptors.

Construction-related Traffic Noise

Noise impacts from construction activities associated with the project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. One type of short-term noise impact that could occur during project construction would result from the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The transport of workers and construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. Because workers and construction equipment would use existing routes, noise from passing trucks would be similar to existing vehicle-generated noise on these local roadways. Typically, a doubling of the average daily trip (ADT) hourly volumes on a roadway segment is required in order to result in an increase of 3 dBA in traffic noise levels; which, as discussed in the characteristics of nose discussion above, is the lowest change that can be perceptible to the human ear in outdoor environments. Project-related construction trips would not be expected to double the hourly or daily traffic volumes along any roadway segment in the project vicinity. For this reason, short-term intermittent noise from construction trips would not be expected to result in a perceptible increase in hourly- or daily-average traffic noise levels in the project vicinity. Therefore, short-term construction-related noise impacts associated with the transportation of workers and equipment to the project site would be less than significant.

Construction Equipment Operational Noise

The second type of short-term noise impact is related to noise generated during construction on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table 1 lists typical construction equipment noise levels, based on a distance of 50 feet between the equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings. Impact equipment such as pile drivers are not expected to be used during construction of this project.

The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment.

Earthmoving equipment includes excavating machinery and compacting equipment, such as bulldozers, draglines, backhoes, front loaders, roller compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings.

Construction of the project is expected to require the use of scrapers, bulldozers, water trucks, haul trucks, and pickup trucks. Based on the information provided in Table 2, the maximum noise level generated by each scraper is assumed to be 85 dBA L_{max} at 50 feet from this equipment. Each bulldozer would also generate 85 dBA L_{max} at 50 feet. The maximum noise level generated by graders is approximately 85 dBA L_{max} at 50 feet. A characteristic of sound is that each doubling of sound sources with equal strength increases a sound level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, a reasonable worst-case combined noise level during this phase of construction would be 90 dBA L_{max} at a distance of 50 feet from the acoustic center of a construction area. This would result in a reasonable worst-case hourly average of 86 dBA L_{eq}, at a distance of 50 feet from the acoustic center of a construction area when multiple pieces of heavy equipment operate simultaneously in relatively the same location for an hour period.

The closest noise-sensitive receptors to the project site is the single-family residence located south of the southeastern corner of the project site, south of Taft Highway and west La Jolla Street. The façade of this closest home would be located approximately 200 feet from the acoustic center of construction activity where multiple pieces of heavy construction equipment would operate simultaneously. At this distance, construction noise levels could range up to approximately 78 dBA L_{max}, with a relative worst-case hourly average of 74 dBA L_{eq} at this receptor. These noise levels could occur temporarily under the reasonable worst-case scenario of multiple pieces of heavy construction equipment operating simultaneously in relatively the same locations at the nearest project boundary for an hour period.

Although there could be a relatively high single event noise exposure potential causing an intermittent noise nuisance, the effect of construction activities on longer-term (hourly or daily) ambient noise levels would be small but could result in a temporary increase in ambient noise levels in the project vicinity that could result in annoyance or sleep disturbance of nearby sensitive receptors. However, Section 9.22.050 of the Bakersfield Municipal Code restricts permissible hours of construction to between the hours of 6:00 a.m. and 9:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 9:00 p.m. on Saturday and Sunday. Therefore, compliance with the City's permissible hours of construction, as well as implementing the best management noise reduction techniques and practices outlined in Mitigation Measure (MM) NOI-1, would ensure that construction noise would not result in a substantial temporary increase in ambient noise levels that would result in annoyance or sleep disturbance of nearby sensitive receptors. Therefore, with implementation of MM NOI-1, temporary construction noise impacts would be reduced to less than significant.

5.3.2 - Mobile Source Operational Noise Impacts

A significant impact would occur if project-generated traffic would result in a substantial increase in ambient noise levels compared with those that would exist without the project. The Metropolitan

Bakersfield General Plan establishes the following criteria for project mobile source noise impacts. A significant impact would occur if the project would cause the CNEL to increase by any of the following:

- 5 dBA or more where the existing ambient noise level is less than 60 dBA CNEL.
- 3 dBA or more where the existing ambient noise level is 60 dBA to 65 dBA CNEL.
- 1.5 dBA or more where the existing ambient noise level is greater than 65 dBA CNEL.

Table 9 shows a summary of the traffic noise levels for Existing (2019), Existing Plus Project (2019), Opening Year (2021), Opening Year Plus Project (2021), Future Cumulative (2035), and Future Cumulative Plus Project (2035) conditions as measured at 50 feet from the centerline of the outermost travel lane.

Table 9: Traffic Noise Increase Summary

Roadway Segment	Existing (dBA) CNEL	Existing Plus Project (dBA) CNEL	Increase over Existing (dBA)	Opening Year (dBA) CNEL	Opening Year Plus Project (dBA) CNEL	Increase over Opening Year (dBA)	Future Cumulative (dBA) CNEL	Future Cumulative Plus Project (dBA) CNEL	Increase over Future Cumulative (dBA)
Taft Highway—H Street to La Jolla Street	64.3	65.1	0.8	64.6	65.3	0.7	64.9	65.6	0.7
Taft Highway—east of La Jolla Street	64.1	64.3	0.2	64.3	64.6	0.3	64.7	64.9	0.2
H Street—Taft Highway to SR-99 off ramp	62.3	62.9	0.6	62.7	63.2	0.5	62.8	63.3	0.5
H Street—south of SR-99 off ramp	59.3	59.3	0.0	59.3	59.3	0.0	59.5	59.5	0.0
Source: FCS 2019.									

As shown in Table 9, the highest traffic noise level increase with implementation of the project would occur along Taft Highway between H Street and La Jolla Street, under Existing Plus Project (2019) conditions. Along this roadway segment, the project would result in an increase in traffic noise levels of 0.8 dBA over existing conditions for this roadway segment. This increase is below the 1.5 dBA increase that would be considered a substantial permanent increase in noise levels compared with noise levels that would exist without the project. Therefore, project-related traffic noise levels would not result in a substantial permanent increase in traffic noise levels in excess of applicable standards, and would represent a less than significant impact.

5.3.3 - Stationary Source Operational Noise Impacts

A significant impact would occur if operational noise levels generated by stationary noise sources at the proposed project site would result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds established in the City's General Plan. The

Metropolitan Bakersfield General Plan establishes exterior noise level standards, measured as a cumulative of 30 minutes in any 1-hour time period, of 55 dBA L_{50} during daytime hours between 7:00 a.m. and 10:00 p.m., and 50 dBA L_{50} during nighttime hours between 10:00 p.m. and 7:00 a.m.

As noted in the characteristics of noise discussion, audible increases in noise levels generally refer to a change of 3 dBA or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. A change of 5 dBA is considered the minimum readily perceptible change to the human ear in outdoor environments. Therefore, for purposes of this analysis, an increase of more than 3 dBA above the applicable noise performance thresholds would be considered a substantial permanent increase in ambient noise levels.

The proposed project would include new stationary noise sources, including parking lot activities, truck repair equipment, and mechanical ventilation equipment.

Parking Lot Activities

Typical parking lot activities include people conversing, doors shutting, and vehicles idling which generate noise levels ranging from approximately 60 dBA to 70 dBA L_{max} at 50 feet. These activities are expected to occur sporadically throughout the day and night, as cars, RVs, and trucks arrive and leave parking lot areas on the project site.

The nearest noise-sensitive receptor to the parking areas of the proposed project is the single-family residence located south of the southeastern corner of the project site, south of Taft Highway and west La Jolla Street. This residence would be located approximately 350 feet from the nearest parking areas on the project site. This closest parking area is one of the parking area designated for large truck parking. Assuming a minimum of one parking movement per stall per hour, hourly average noise levels associated with daily parking lot activities would be approximately 42 dBA L_{eq} at the nearest residential property line. These noise levels would not exceed the City's most restrictive noise performance threshold, the nighttime exterior noise level standard, of 50 dBA L_{50}, as measured at the closest receiving residential land use. Therefore, operational parking lot activity noise levels would not result in a substantial permanent increase in ambient noise levels in excess of any of the City's noise performance thresholds, and would represent a less than significant impact.

Truck Repair Equipment

Noise would also be generated by truck repair equipment operations, such as air compressor and generators. Operation of this equipment would occur inside the proposed maintenance building; the walls of this building, even with bay doors open, would provide a minimum 10 dBA reduction, as measured at residential land uses south of the project site. In addition, there is an existing 6-foot high soundwall bordering this residential land use that would block the line of sight to the maintenance building. The loudest pieces of equipment that could operate in this facility are air compressor and generator types of equipment. As shown in Table 2, typical noise levels from air compressors and generators can range up to 82 dBA L_{max} as measured at 50 feet. The maintenance building would be located approximately 565 feet from the nearest off-site noise-sensitive receptor, which is the single-family residence located south of the southeastern corner of the project site, south of Taft Highway and west La Jolla Street. At this distance, truck repair equipment could result

in intermittent noise levels ranging up to approximately 48 dBA L_{max}. These activities are expected to occur primarily during the day and minimally at night. Assuming multiple generator or air compressor equipment operating in a single hour period, reasonable worst-case hourly average noise levels associated with these activities would be approximately 45 dBA L_{eq} at the nearest residential property line. Therefore, these projected loudest operational noise levels from stationary noise sources associated with the maintenance building operations would not exceed the City's most restrictive noise performance threshold, the nighttime exterior noise level standard, of 50 dBA L_{50}, as measured at the nearest residential receptor. Therefore, operational noise levels from truck repair equipment would not result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds, and would represent a less than significant impact.

Mechanical Ventilation Equipment

Implementation of the project would include operation of new rooftop mechanical ventilation equipment on the proposed convenience store, which would be a new stationary noise source in the project vicinity. At the time of preparation of this analysis, specific details of rooftop mechanical ventilation systems were not available; therefore, a reference noise level for typical rooftop mechanical ventilation systems was used. Noise levels from typical commercial-grade mechanical ventilation equipment systems range up to approximately 60 dBA L_{eq} at a distance of 25 feet. The rooftop mechanical ventilation systems could be located as close as 855 feet from the nearest off-site noise-sensitive receptor, which is the single-family residence located south of the southeastern corner of the project site, south of Taft Highway and west La Jolla Street. At this distance, these mechanical ventilation system operational noise levels would attenuate to below 29 dBA L_{eq}, as measured at the nearest noise-sensitive receptor. These noise levels would not exceed the City's most restrictive noise performance threshold, the nighttime exterior noise level standard, of 50 dBA L_{50}, as measured at the nearest residential receptor. Therefore, operational noise levels generated by the proposed mechanical ventilation equipment would not result in a substantial permanent increase in ambient noise levels in excess of any of the noise performance thresholds, and would represent a less than significant impact.

Mitigation Measures

Project construction activity noise impacts, which could result in a temporary increase in ambient noise levels in the project vicinity that could result in annoyance or sleep disturbance of nearby sensitive receptors, would be reduced to less than significant with implementation of the following multi-part mitigation measure.

MM NOI-1 Implementation of the following multi-part mitigation measure is required to reduce potential construction period noise impacts:

- The construction contractor shall ensure that all equipment driven by internal combustion engines shall be equipped with mufflers that are in good condition and appropriate for the equipment.
- The construction contractor shall ensure that unnecessary idling of internal combustion engines (i.e., idling in excess of 5 minutes) is prohibited.

- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, the construction contractor shall ensure that stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from adjacent residences.
- The construction contractor shall ensure that the construction staging areas shall be located to create the greatest feasible distance between the staging area and noise-sensitive receptors nearest the project site.
- The construction contractor shall ensure that all on-site construction activities, including the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work, are limited to between the hours of 6:00 a.m. and 9:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 9:00 p.m. on Saturday and Sunday.

5.4 - Groundborne Vibration/Noise Levels

This section analyzes both construction and operational groundborne vibration and noise impacts. Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. Groundborne noise is generated when vibrating building components radiate sound, or noise generated by groundborne vibration. In general, if groundborne vibration levels do not exceed levels considered to be perceptible, then groundborne noise levels would not be perceptible in most interior environments. Therefore, this analysis focuses on determining exceedances of groundborne vibration levels.

The City of Bakersfield has not adopted criteria for groundborne vibration impacts. Therefore, for purposes of this analysis, the FTA's vibration impact criteria are utilized. The FTA has established industry accepted standards for vibration impact criteria and impact assessment. These guidelines are published in its Transit Noise and Vibration Impact Assessment Manual.[8] These guidelines are summarized in Table 5.

5.4.1 - Short-term Construction Vibration Impacts

A significant impact would occur if existing structures at the project site or in the project vicinity would be exposed to groundborne vibration levels in excess of levels established by the FTA's Construction Vibration Impact Criteria for the listed type of structure, as shown in Table 5.

Of the variety of equipment used during construction, the small vibratory rollers that are anticipated to be used in the site preparation phase of construction would produce the greatest groundborne vibration levels. Small vibratory rollers produce groundborne vibration levels ranging up to 0.101 inch per second (in/sec) PPV at 25 feet from the operating equipment.

[8] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. September.

The nearest off-site receptor to the project site is the commercial building located west of the project site, across H Street. The façade of this building would be located approximately 90 feet from the nearest construction footprint where the heaviest construction equipment would potentially operate. At this distance, groundborne vibration levels would range up to 0.015 PPV from operation of the types of equipment that would produce the highest vibration levels. This is well below the FTA's Construction Vibration Impact Criteria of 0.2 PPV for this type of structure, a building of non-engineer timber construction. Therefore, the impact of short-term groundborne vibration associated with construction to off-site receptors would be less than significant.

5.4.2 - Operational Vibration Impacts

Implementation of the project would not include any permanent sources that would expose persons in the project vicinity to groundborne vibration levels that could be perceptible without instruments at any existing sensitive land use in the project vicinity. In addition, there are no existing significant permanent sources of groundborne vibration in the project vicinity to which the proposed project would be exposed. Therefore, project operational groundborne vibration level impacts would be considered less than significant.

5.5 - Excessive Noise Levels from Airport Activity

A significant impact would occur if the project would expose people residing or working in the project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.

The project site is not located within the vicinity of a private airstrip. The nearest public airport to the project site is the Bakersfield Municipal Airport, located approximately 3.6 miles north of the project site. Because of the distance of the project site from the airport runways, the project site is located outside of the 65 dBA CNEL airport noise contours. While aircraft noise is occasionally audible on the project site from aircraft flyovers, aircraft noise associated with nearby airport activity would not expose people residing or working near the project site to excessive noise levels. Therefore, implementation of the project would not expose persons residing or working in the project vicinity to noise levels from airport activity that would be in excess of normally acceptable standards for the proposed land use development, and no impact would occur.

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Appendix A:
Noise Modeling Data

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TABLE Existing (2019)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - H Street to La Jolla Street
NOTES: Karpe Development Project - Existing (2019)

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9500 SPEED (MPH): 40 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL 70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.7	128.4	274.4

TABLE Existing (2019)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - east of La Jolla Street
NOTES: Karpe Development Project - Existing (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL	70 CNEL	65 CNEL	60 CNEL	55 CNEL
	0.0	59.7	124.0	264.8

TABLE Existing (2019)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - Taft Highway to SR 99 off ramp
NOTES: Karpe Development Project - Existing (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	80.0	172.0

TABLE Existing (2019)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - south of SR 99 off ramp
NOTES: Karpe Development Project - Existing (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	61.3	127.4

TABLE Existing + Project (2019)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - H Street to La Jolla Street
NOTES: Karpe Development Project - Existing + Project (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	69.0	144.7	309.8

TABLE Existing + Project (2019)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - east of La Jolla Street
NOTES: Karpe Development Project - Existing + Project (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.7	128.4	274.4

TABLE Existing + Project (2019)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - Taft Highway to SR 99 off ramp
NOTES: Karpe Development Project - Existing + Project (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3100 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.95

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	87.7	188.6

TABLE Existing + Project (2019)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - south of SR 99 off ramp
NOTES: Karpe Development Project - Existing + Project (2019)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	61.3	127.4

TABLE Opening Year (2021)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - H Street to La Jolla Street
NOTES: Karpe Development Project - Opening Year (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	64.1	133.7	285.8

TABLE Opening Year (2021)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - east of La Jolla Street
NOTES: Karpe Development Project - Opening Year (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.7	128.4	274.4

TABLE Opening Year (2021)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - Taft Highway to SR 99 off ramp
NOTES: Karpe Development Project - Opening Year (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2900 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	83.9	180.4

TABLE Opening Year (2021)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - south of SR 99 off ramp
NOTES: Karpe Development Project - Opening Year (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	61.3	127.4

TABLE Opening Year + Project (2021) -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - H Street to La Jolla Street
NOTES: Karpe Development Project - Opening Year + Project (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	71.3	149.7	320.5

TABLE Opening Year + Project (2021) -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - east of La Jolla Street
NOTES: Karpe Development Project - Opening Year + Project (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10100 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	64.1	133.7	285.8

TABLE Opening Year + Project (2021) -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - Taft Highway to SR 99 off ramp
NOTES: Karpe Development Project - Opening Year + Project (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3300 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	91.4	196.6

TABLE Opening Year + Project (2021) -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - south of SR 99 off ramp
NOTES: Karpe Development Project - Opening Year + Project (2021)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1700 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.27

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	61.3	127.4

TABLE Future Cumulative (2035)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - H Street to La Jolla Street
NOTES: Karpe Development Project - Future Cumulative (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	66.8	139.7	298.8

TABLE Future Cumulative (2035)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - east of La Jolla Street
NOTES: Karpe Development Project - Future Cumulative (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	64.8	135.4	289.6

TABLE Future Cumulative (2035)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - Taft Highway to SR 99 off ramp
NOTES: Karpe Development Project - Future Cumulative (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	85.8	184.5

TABLE Future Cumulative (2035)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - south of SR 99 off ramp
NOTES: Karpe Development Project - Future Cumulative (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1800 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	63.4	132.3

TABLE Future Cumulative + Project (2035)-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - H Street to La Jolla Street
NOTES: Karpe Development Project - Future Cumulative + Project (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.58

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	73.9	155.3	332.8

TABLE Future Cumulative + Project (2035)-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: Taft Highway - east of La Jolla Street
NOTES: Karpe Development Project - Future Cumulative + Project (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	66.8	139.7	298.8

TABLE Future Cumulative + Project (2035)-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - Taft Highway to SR 99 off ramp
NOTES: Karpe Development Project - Future Cumulative + Project (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3400 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	93.3	200.6

TABLE Future Cumulative + Project (2035)-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 11/04/2019
ROADWAY SEGMENT: H Street - south of SR 99 off ramp
NOTES: Karpe Development Project - Future Cumulative + Project (2035)

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1800 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	63.4	132.3

Parking Lot activity

Receptor: Hypothetical

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 50 ft		Usage	Distance to	Ground	Shielding	Calculated (dBA)		
No.	Equipment Description	Lmax	Quantity	factor**	Receptor	Effect	(dBA)	Lmax	Leq	Energy
1	parking lot activity(6 stalls nearest southeast corner)	70	6	1	350	0.5	0	53.1	36.7	4628.136404
2	parking lot activity (next 6 stalls farther to the west)	70	6	1	358	0.5	0	52.9	36.4	4373.898439
3	parking lot activity (next 6 stalls farther to the west)	70	6	1	395	0.5	0	52.0	35.3	3420.452173
4	parking lot activity (6 stalls north of southeast corner)	70	6	1	443	0.5	0	51.1	34.1	2567.834004
5										
6										
7										
8										
9										
10										
							Lmax*	**53.0**	**Leq**	**42**

Notes:

*Calculated Lmax is the Loudest value.

** Percentage of time per hour of a parking event

Measured to center point of each group of 6 parking stalls

Shielding accounts for fence and vegetation shielding

Generator/Air Compresor Operational Noise Calculation

Receptor: Hypothetical

		Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 50 ft		Usage	Distance to	Ground	Shielding	Calculated (dBA)		
No.	Equipment Description	Lmax	Quantity	factor**	Receptor	Effect	(dBA)	Lmax	Leq	Energy
1	generator/air compressor	82	4	40	565	0.5	13	47.9	44.7	29609.00913
2										
3										
4										
5										
6										
7										
8										
9										
10										
							Lmax*	48	Leq	45

Notes:

*Calculated Lmax is the Loudest value.

** Percentage of time during a construction noise operation that a piece of equipment is operating at full power

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Project No: 598-02

TRAFFIC STUDY

PROPOSED COMMERCIAL DEVELOPMENT
AT THE NORTHEAST CORNER OF
SOUTH H STREET & TAFT HIGHWAY (SR 119)

Prepared for:

Lane Engineers, Inc.

July 2019
REVISED March 2020

Prepared by:

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INTRODUCTION

The purpose of this study is to evaluate the potential traffic impact of a proposed commercial development located at the northeast corner of South H Street and Taft Highway (State Route 119) in Kern County, California.

A. Land Use, Site and Study Area Boundaries

The proposed project consists of a travel center, which includes 16 auto fueling positions and 8 truck fueling position (See Figure 3: Site Plan). The City of Bakersfield zoning classification for the site is C-2 (General Commercial).

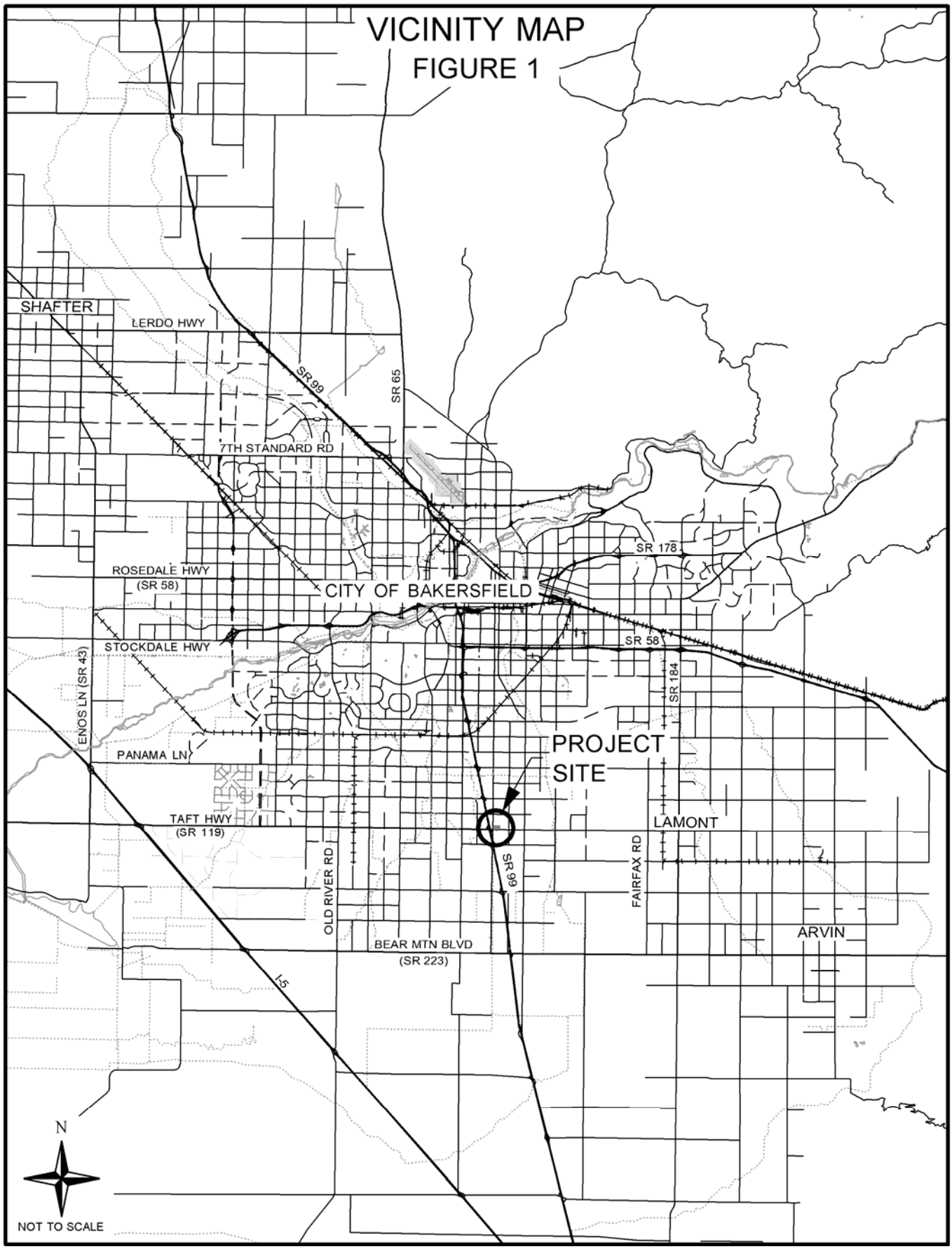
The scope of the study includes six intersections, five which are signalized and one that is stop controlled. The scope of the study was developed in association with the City of Bakersfield Public Works Department and Caltrans District 6. A vicinity map is presented in Figure 1 and a location map is presented in Figure 2.

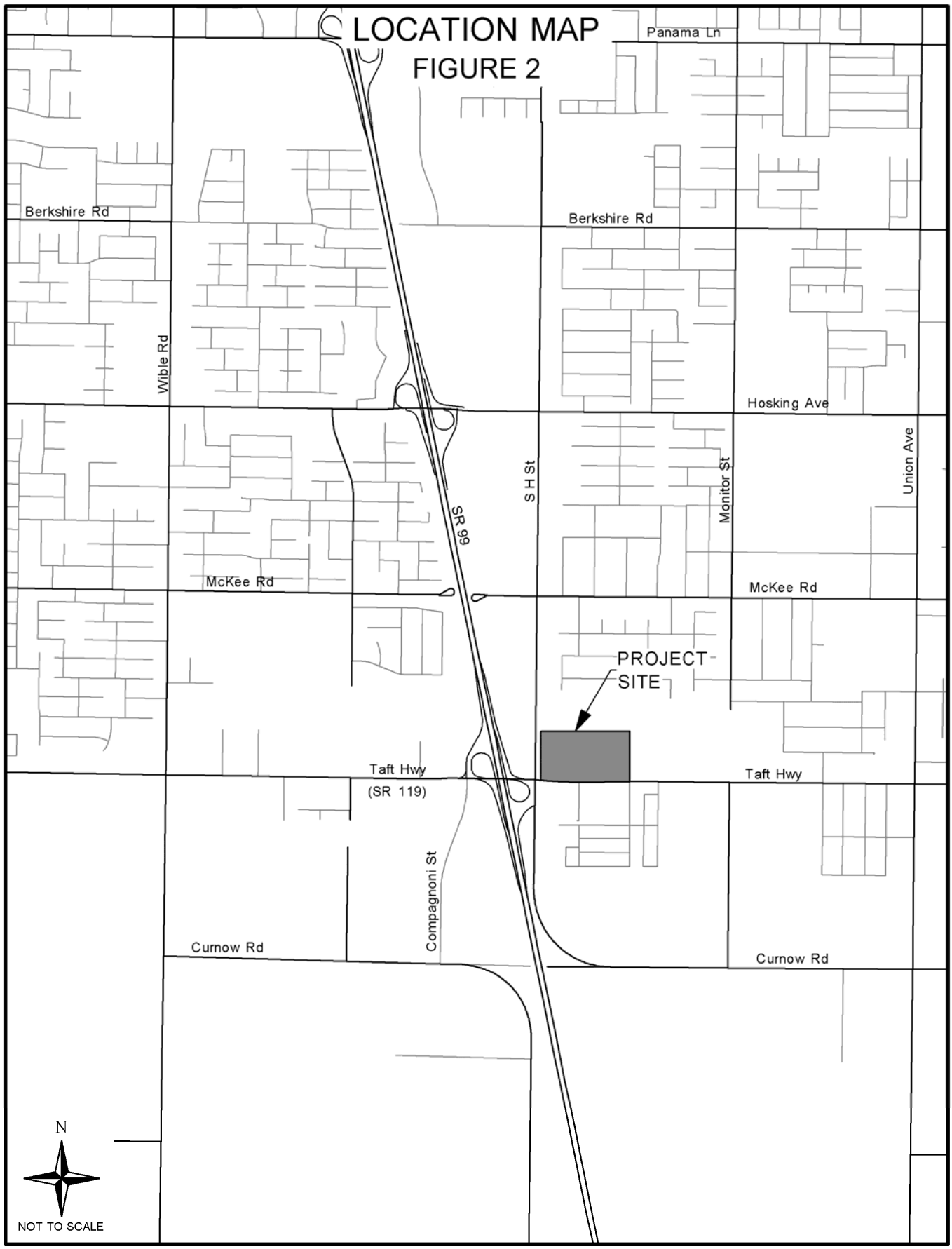
B. Existing Site Uses and Site Access

The project site currently consists of flat vacant land, with no building or other structures. Access to the site is proposed along Taft Highway.

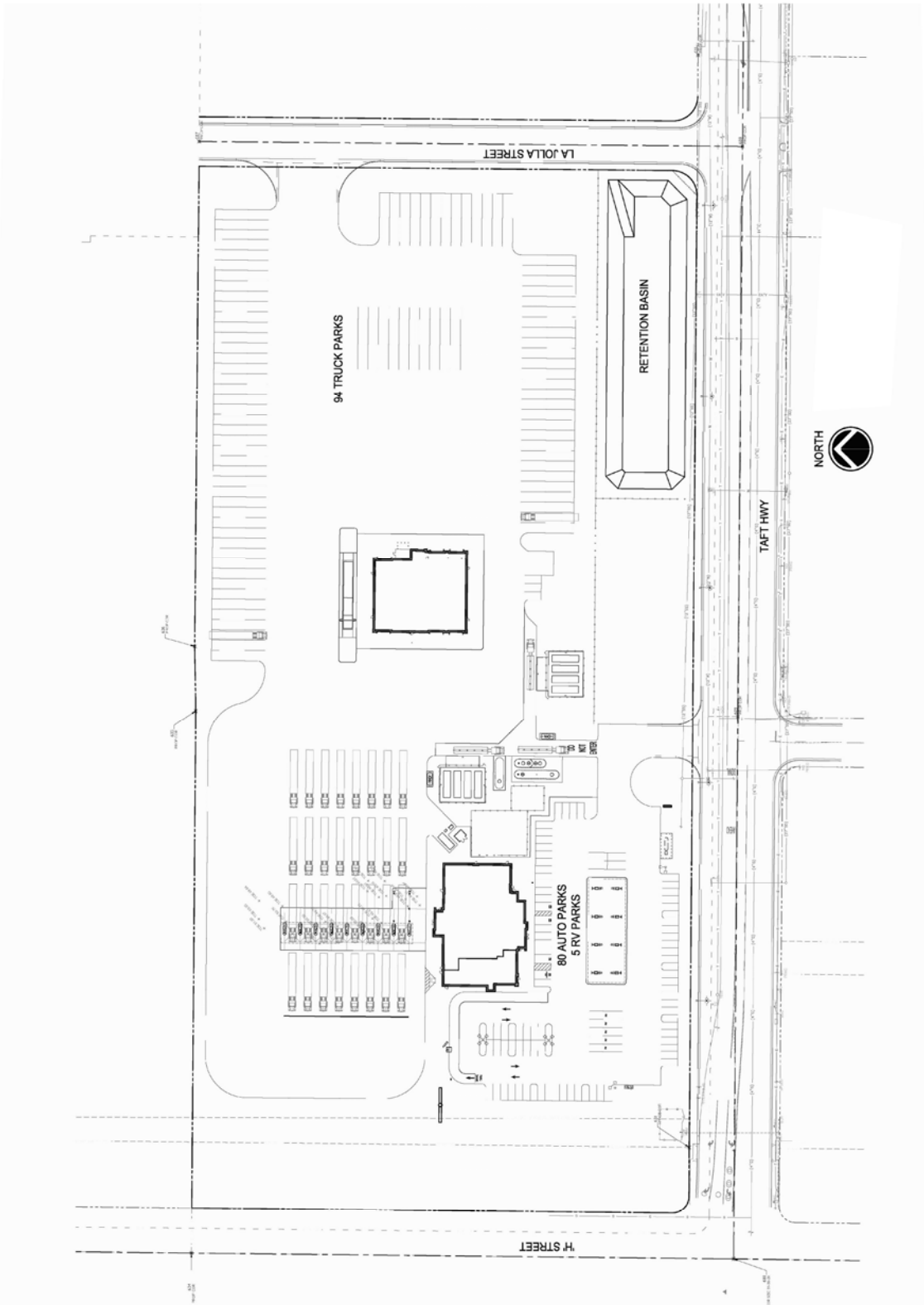
C. Existing Uses in Vicinity of the Site

Existing land uses in the vicinity of the project site include single-family residences to the north and east, a mini-storage facility, manufactured home retailer and mobile home park to the south, commercial and residential land uses to the west, as well as the Kern Island Canal along the west border of the site. The interchange of State Route 99 and State Route 119 is 650 feet west of the project site.


VICINITY MAP
FIGURE 1
SHAFTER
LERDO HWY
SR 99
SR 65
7TH STANDARD RD
ROSEDALE HWY
(SR 58)
CITY OF BAKERSFIELD
SR 178
STOCKDALE HWY
SR 58
ENOS LN (SR 43)
SR 184
PANAMA LN
PROJECT
SITE
TAFT HWY
(SR 119)
LAMONT
OLD RIVER RD
SR 99
FAIRFAX RD
ARVIN
BEAR MTN BLVD
(SR 223)
I-5
N
NOT TO SCALE


LOCATION MAP
FIGURE 2
Panama Ln
Berkshire Rd
Berkshire Rd
Wible Rd
Hosking Ave
S H St
SR 99
Monitor St
Union Ave
McKee Rd
McKee Rd
PROJECT SITE
Taft Hwy
(SR 119)
Taft Hwy
Compagnoni St
Curnow Rd
Curnow Rd
N
NOT TO SCALE

SITE PLAN
FIGURE 3



D. Roadway Descriptions

State Route 99 (Golden State Highway) is a major north-south route through the central valley of California, extending from Interstate 5 south of Bakersfield to Sacramento. State Route 99 operates as an eight-lane freeway between the interchange with Taft Highway and Airport Drive, with six-lanes elsewhere in Kern County.

South H Street is a two-lane north-south arterial with improvements adjacent to development to the north. In the vicinity of the project, South H Street provides access to commercial and residential land uses, as well as State Route 119 (Taft Highway).

Taft Highway, an east-west roadway, is designated as an expressway west of State Route 99 (State Route 119) and as an arterial east of State Route 99. It currently exists as a two-lane roadway at various stages of widening adjacent to development between State Route 99 and South Union Avenue. Taft Highway continues as a two-lane roadway with graded shoulders east of South Union Avenue along the Panama Road alignment. Within the project vicinity, Taft Highway provides access from the communities of Greenfield, Weedpatch and Lamont to State Route 99.

S Union Avenue is designated as an arterial. Formerly a segment of State Route 99, South Union Avenue extends from State Route 99 to Brundage Lane, and continues north to Columbus Street as Union Avenue. In the project vicinity, South Union Avenue operates with six-lanes and narrows to four-lanes south of Taft Highway. It provides access to residential, commercial and industrial areas.

Wible Road is a north-south arterial located adjacent to State Route 99. It currently operates as a four-lane roadway north of Berkshire Road and as a two-lane roadway at various widths and stages of improvement south of Berkshire Road. It provides access to residential, commercial and industrial land uses within the study area.

PROJECT TRIP GENERATION AND DESIGN HOUR VOLUMES

The Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition manual, which is typically used in order to estimate traffic volumes generated by various types of land uses, provides very little data for truck stops, and does not capture the wide range of services truck stops provide. Therefore, the trip generation and design hour volumes shown in Table 1 were calculated using a study prepared specifically for this type of land use. Information for the study was gathered from six locations with similar land uses throughout California, and represents the anticipated characteristics of the project being studied here (a copy of the study is included in the appendix). The data provided in the trip generation study was used to prepare the project traffic estimates shown below.

Table 1
Project Trip Generation

General Information			Daily Trips		AM Peak Hour Trips			PM Peak Hour Trips		
ITE Code	Development Type	Variable	ADT RATE	ADT	Rate	In % Split/ Trips	Out % Split/ Trips	Rate	In % Split/ Trips	Out % Split/ Trips
Omni	Commercial Development (Truck Stop)	24 Vehicle Fueling Positions	213.03	5113	10.7	50% 129	50% 129	12.12	50% 145	50% 145
sub-total				5,113		129	129		145	145
Adjustments										
Pass-by		15%		767		19	19		22	22
Total				4,346		110	110		123	123

In addition to trip generation volumes, the study also determined that approximately 88% of the trips are diverted link trips when adjacent to an interchange, as this proposed project is.

TRIP DISTRIBUTION AND ASSIGNMENT

The project trip distribution in Table 2 represents the most logically traveled routes for traffic accessing the project. Project traffic distribution was estimated based on a review of the potential draw from State Route 119, State Route 99, and the type of land use involved. These assumptions were used to distribute project traffic as shown in Figure 4.

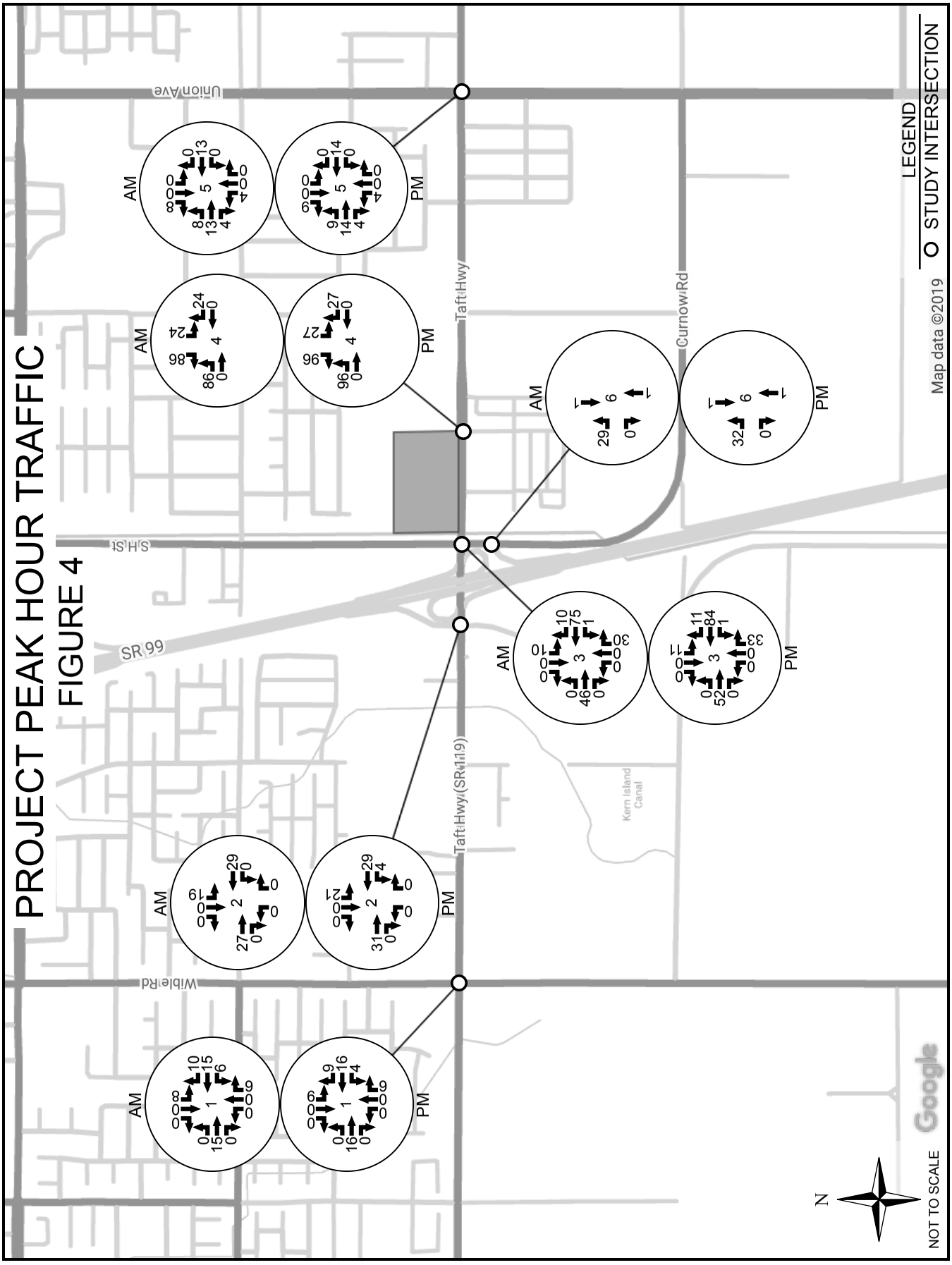
Table 2
Project Trip Distribution

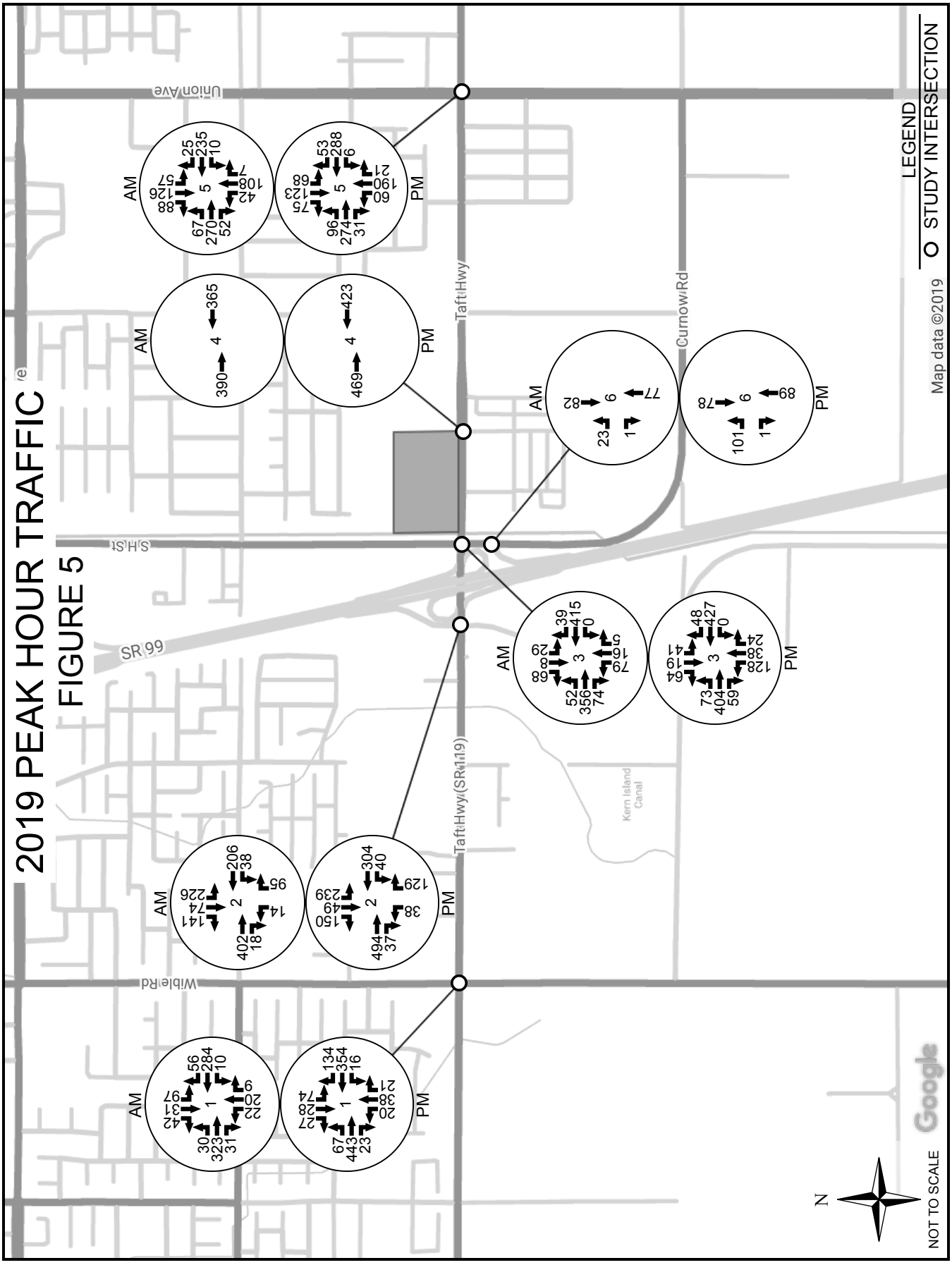
Direction	Percent	Primary Roadways
North	35%	South H Street/State Route 99
East	15%	Taft Highway (State Route 119)
South	35%	South H Street/State Route 99
West	15%	Taft Highway (State Route 119)

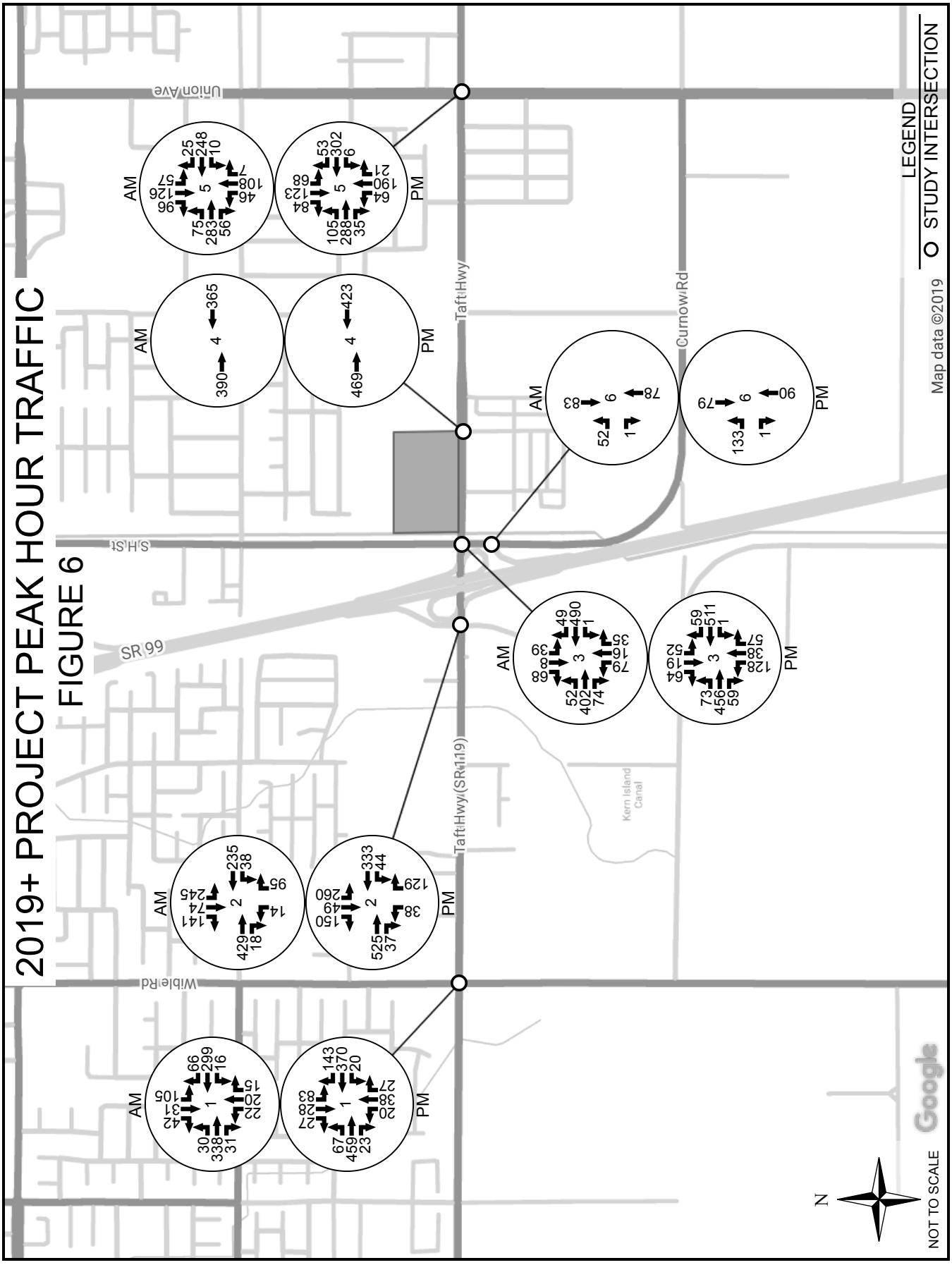
EXISTING AND FUTURE TRAFFIC

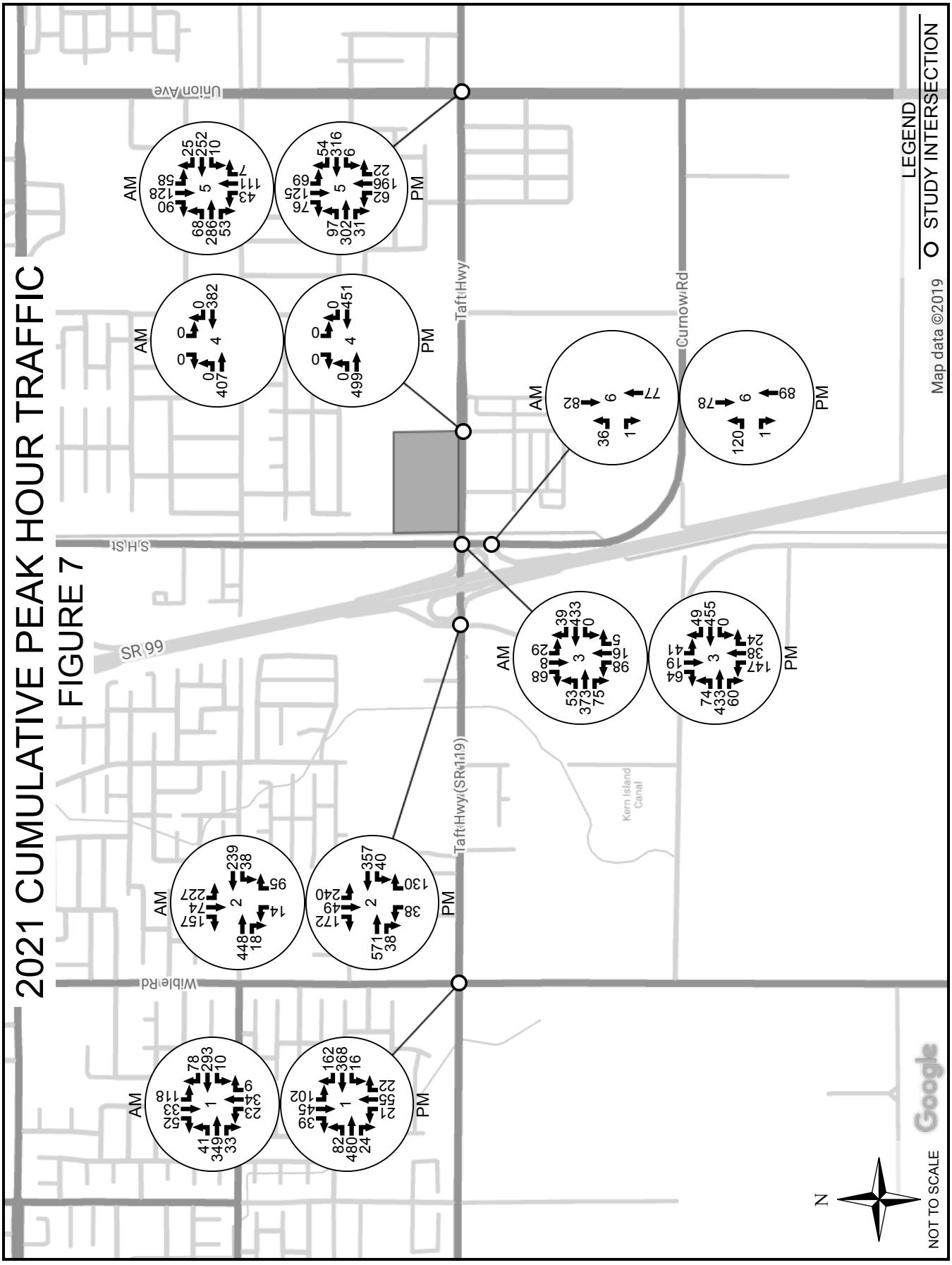
Existing peak hour turn movement volumes were field measured on May 9, 2019 at the study intersections and are shown in Figure 4. Existing plus project peak hour volumes are shown in Figure 6.

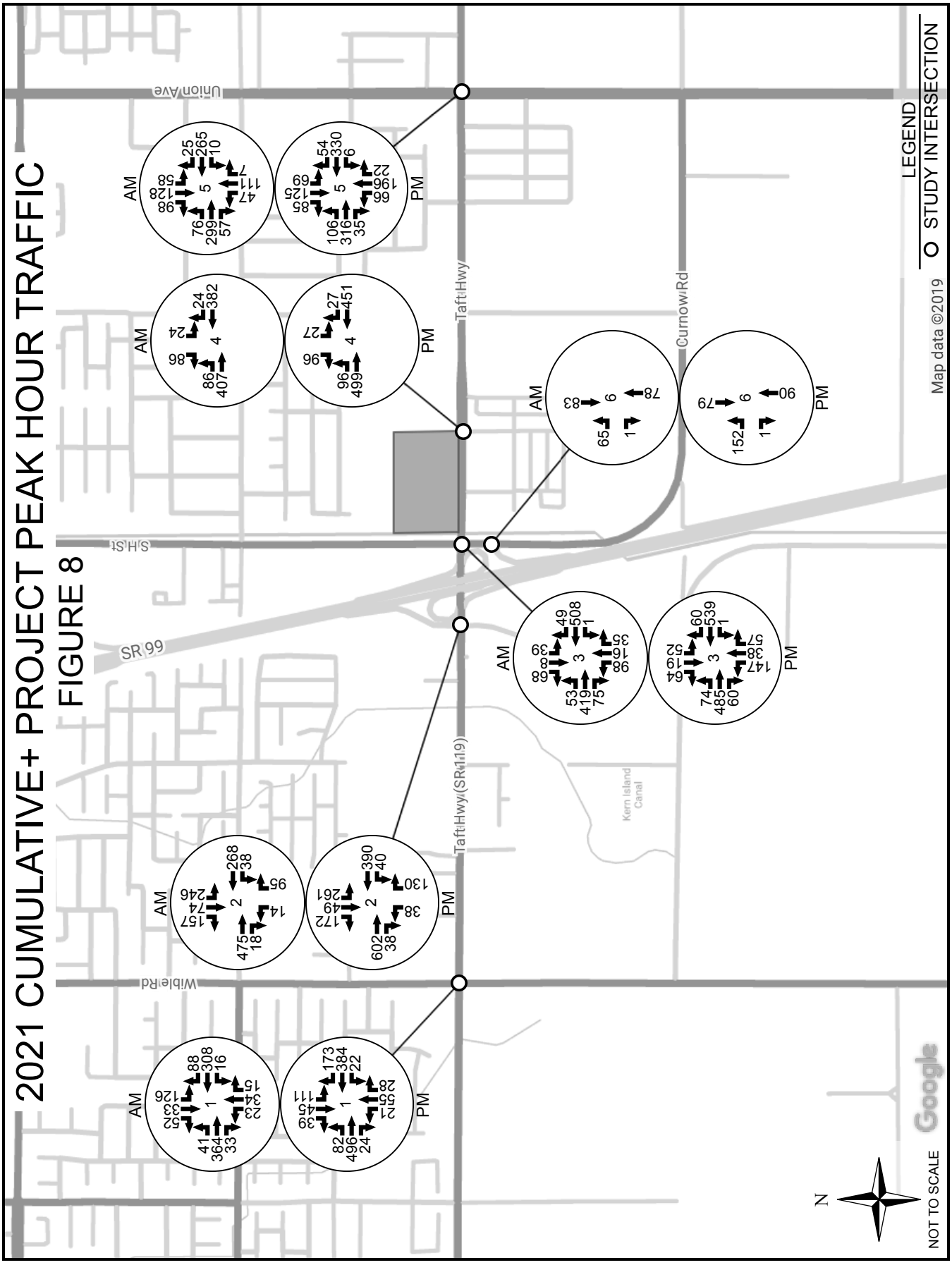
Annual growth rates of approximately 0.15% to 3.13% were applied to existing traffic volumes to estimate future traffic volumes for the year 2035. These growth rates were estimated based on a review of existing developments and KernCOG traffic model data. Cumulative traffic was also estimated for projects that would not yet be accounted for in the KernCOG traffic model. An estimate of the cumulative traffic was distributed and added to the future traffic volume estimates at the study intersections. Future peak hour volumes are shown in Figures 7 and 8.

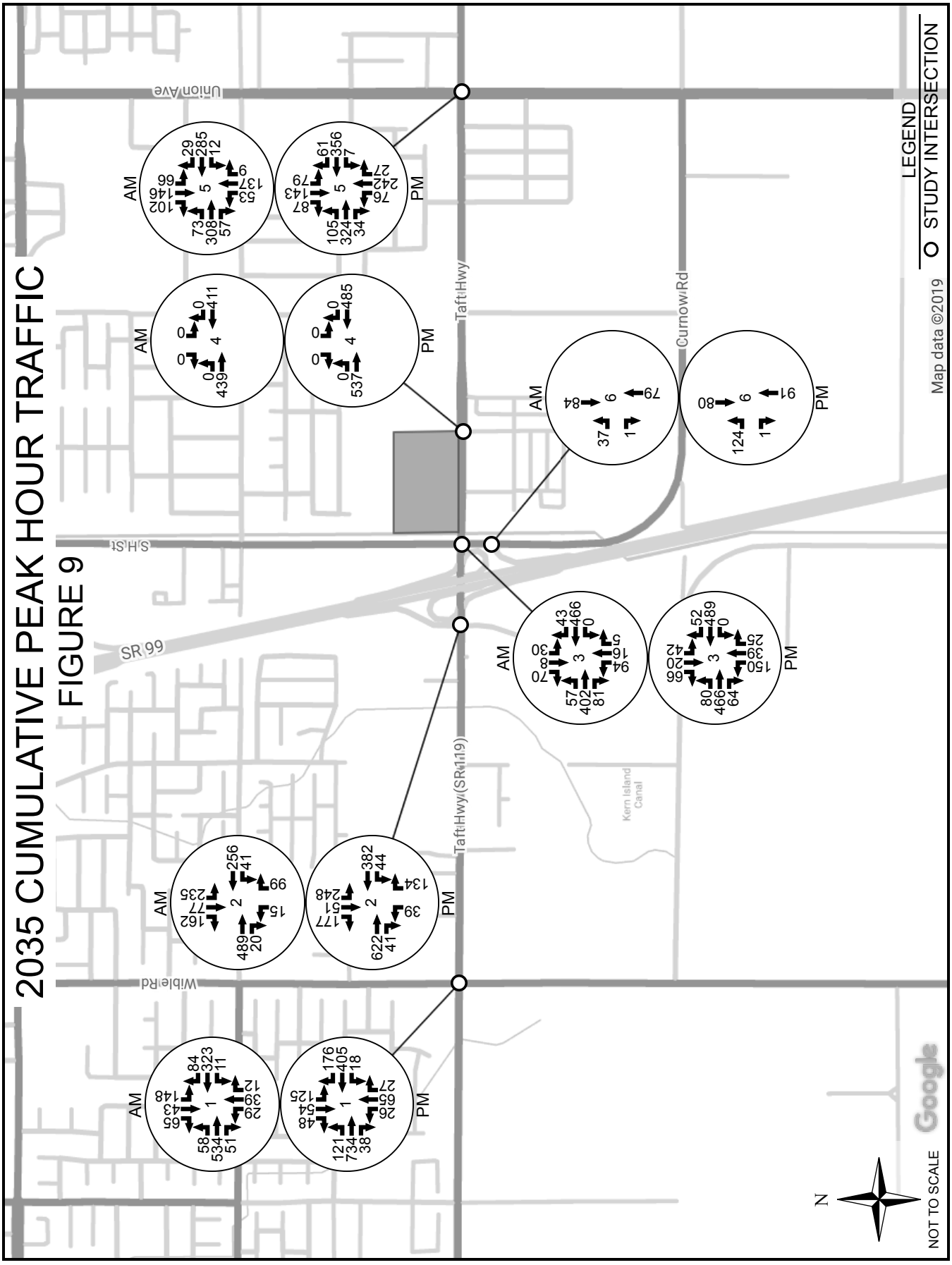

PROJECT PEAK HOUR TRAFFIC
FIGURE 4
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Union Ave
S H St
SR 99
Taft Hwy
Taft Hwy (SR 119)
Curnow Rd
Wible Rd
Kern Island Canal
AM
PM

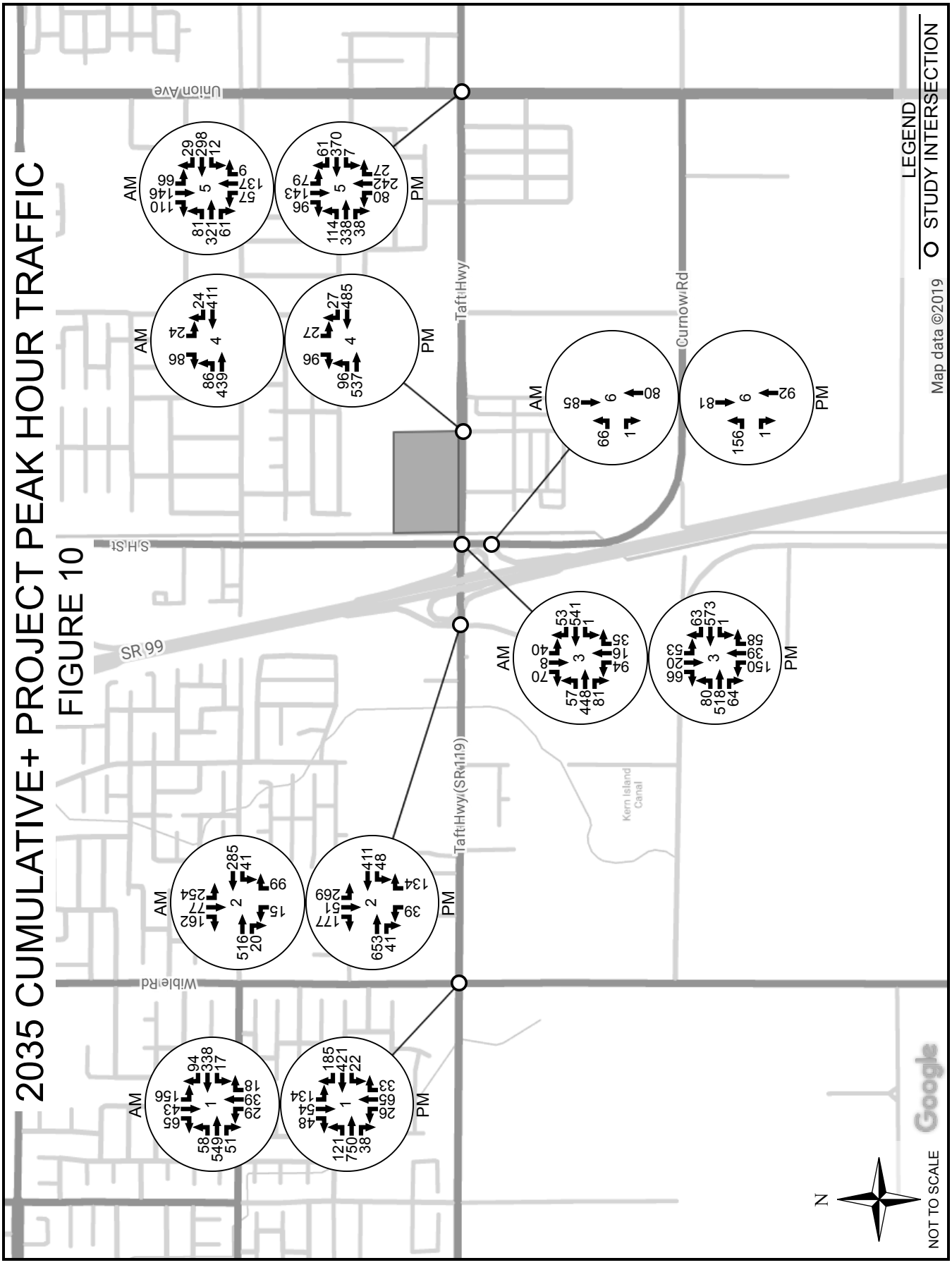

2019 PEAK HOUR TRAFFIC
FIGURE 5
LEGEND
STUDY INTERSECTION
Map data ©2019
Google
NOT TO SCALE
N
Taft Hwy
Taft Hwy (SR 119)
SR 99
S H St
Wible Rd
Union Ave
Curnow Rd
Kern Island Canal
AM
PM


2019+ PROJECT PEAK HOUR TRAFFIC
FIGURE 6
LEGEND
STUDY INTERSECTION
Map data ©2019
Google
NOT TO SCALE
N
Union Ave
S H St
SR 99
Taft Hwy
Taft Hwy (SR 119)
Wible Rd
Curnow Rd
Kern Island Canal
AM
PM


2021 CUMULATIVE PEAK HOUR TRAFFIC
FIGURE 7
LEGEND
STUDY INTERSECTION
Map data ©2019
Google
N
NOT TO SCALE
Union Ave
S H St
SR 99
Wible Rd
Taft Hwy
Taft Hwy (SR 119)
Curnow Rd
Kern Island Canal
AM
PM


2021 CUMULATIVE+ PROJECT PEAK HOUR TRAFFIC
FIGURE 8
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Union Ave
S H St
SR 99
Wible Rd
Taft Hwy (SR 119)
Taft Hwy
Curnow Rd
Kern Island Canal
AM
PM


2035 CUMULATIVE PEAK HOUR TRAFFIC
FIGURE 9
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Union Ave
S H St
SR 99
Taft Hwy
Taft Hwy (SR 119)
Curnow Rd
Wible Rd
Kern Island Canal
AM
PM


2035 CUMULATIVE+ PROJECT PEAK HOUR TRAFFIC
FIGURE 10
LEGEND
STUDY INTERSECTION
Map data ©2019
NOT TO SCALE
N
Google
Union Ave
S H St
SR 99
Taft Hwy
Taft Hwy (SR 119)
Wible Rd
Curnow Rd
Kern Island Canal
AM
PM

INTERSECTION ANALYSIS

A capacity analysis of the study intersections was conducted using Synchro 9 software from Trafficware. This software utilizes the 2010 capacity analysis methodology in the Transportation Research Board's Highway Capacity Manual. The analysis was performed for the following traffic scenarios:

- Existing (2019)
- Existing+Project (2019)
- Opening Year
- Opening Year+Project
- Future - Cumulative (2035)
- Future - Cumulative+Project (2035)

Level of service (LOS) criteria for unsignalized and signalized intersections, as described in HCM 2010, are presented in the tables below. Level of service analysis results for the study intersections are presented in Table 3. The intersection peak hour level of service goal for the City of Bakersfield is LOS C or better.

LEVEL OF SERVICE CRITERIA
UNSIGNALIZED INTERSECTION

Average Control Delay (sec/veh)	Level of Service	Expected Delay to Minor Street Traffic
≤ 10	A	Little or no delay
> 10 and ≤ 15	B	Short traffic delays
> 15 and ≤ 25	C	Average traffic delays
> 25 and ≤ 35	D	Long traffic delays
> 35 and ≤ 50	E	Very long traffic delays
> 50	F	Extreme delays

LEVEL OF SERVICE CRITERIA
SIGNALIZED INTERSECTIONS

Volume/Capacity	Control Delay (sec/veh)	Level of Service
< 0.60	≤ 10	A
0.61 - 0.70	> 10 and ≤ 20	B
0.71 - 0.80	> 20 and ≤ 35	C
0.81 - 0.90	> 35 and ≤ 55	D
0.91 - 1.00	> 55 and ≤ 80	E
> 1.0	> 80	F

Table 3a
AM Intersection Level of Service

#	Intersection	Control Type	2019	2019+ Project	2021 Cum[1]	2021 Cum[1]+ Project	2035 Cum[1]	2035 Cum[1]+ Project	2035 Cum[1]+ Project w/Mitigation[2]
1	Wible Rd & Taft Hwy (SR 119)	Signal	C	C	C	C	C	C	C[3]
2	SR 99 SB Off Ramp/Compagnoni St & Taft Hwy (SR 119)	Signal	C	C	C	C	C	C	-
3	H St & Taft Hwy (SR 119)	Signal	B	B	B	B	B	B	-
4	Project Entrance & Taft Hwy (SR 119)/ Panama Rd	Signal	A	A	A	B	A	B	-
5	Union Ave & Taft Hwy (SR 119)/ Panama Rd	Signal	C	C	C	C	C	C	-
6	S H St & SR 99 NB Off Ramp	EB	A	B	A	B	B	B	-

[1]Cum=Other Project traffic added to future background volumes.
[2]See Table 7 for Mitigation Measures.
[3]Mitigation due to PM level of service.

Table 3b
PM Intersection Level of Service

#	Intersection	Control Type	2019	2019+ Project	2021 Cum[1]	2021 Cum[1]+ Project	2035 Cum[1]	2035 Cum[1]+ Project	2035 Cum[1]+ Project w/Mitigation[2]
1	Wible Rd & Taft Hwy (SR 119)	Signal	C	C	C	C	D (41.5)	D (43.7)	C
2	SR 99 SB Off Ramp/Compagnoni St & Taft Hwy (SR 119)	Signal	C	C	C	C	C	C	-
3	H St & Taft Hwy (SR 119)	Signal	B	B	B	B	B	B	-
4	Project Entrance & Taft Hwy (SR 119)/ Panama Rd	Signal	A	A	A	B	A	B	-
5	Union Ave & Taft Hwy (SR 119)/ Panama Rd	Signal	C	C	C	C	C	C	-
6	S H St & SR 99 NB Off Ramp	EB	B	B	B	B	B	B	-

[1]Cum=Other Project traffic added to future background volumes.
[2]See Table 7 for Mitigation Measures.

TRAFFIC SIGNAL WARRANT ANALYSIS

A peak hour signal warrant evaluation was conducted for the study intersections based on the California Manual on Uniform Traffic Control Devices (MUTCD). Peak hour signal warrants assess delay to traffic on the minor street approaches when entering or crossing a major street. Signal warrant analysis results for the AM and PM peak hour are shown in Tables 4a through 4d.

It is important to note that a signal warrant defines the minimum condition under which signalization of an intersection might be warranted. Meeting this threshold does not suggest traffic signals are required, but rather, that other traffic factors and conditions be considered in order to determine whether signals are truly justified.

It is also noted that signal warrants do not necessarily correlate with level of service. An intersection may satisfy a signal warrant condition and operate at or above an acceptable level of service, or operate below an acceptable level of service and not meet signal warrant criteria.

Table 4a
AM Traffic Signal Warrants - Existing

		2019			2019+Project		
#	Intersection	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
4	Project Entrance at Taft Hwy (SR 119)	755	0	NO	865	110	NO
6	H St at SR 99 NB Off Ramp	159	24	NO	161	53	NO

Table 4b
AM Traffic Signal Warrants - Future

		2021 Cumulative			2021+Project Cumulative			2035 Cumulative			2035+Project Cumulative		
#	Intersection	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
4	Project Entrance at Taft Hwy (SR 119)	789	0	NO	899	110	NO	850	0	NO	960	110	NO
6	H St at SR 99 NB Off Ramp	159	37	NO	161	66	NO	163	38	NO	165	67	NO

Table 4c
PM Traffic Signal Warrants - Existing

		2019			2019+Project		
#	Intersection	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
4	Project Entrance at Taft Hwy (SR 119)	892	0	NO	1015	123	NO
6	H St at SR 99 NB Off Ramp	167	102	NO	169	134	NO

Table 4d
PM Traffic Signal Warrants - Future

		2021 Cumulative			2021+Project Cumulative			2035 Cumulative			2035+Project Cumulative		
#	Intersection	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met	Major Street Total Approach Vol	Minor Street High Approach Vol	Warrant Met
4	Project Entrance at Taft Hwy (SR 119)	950	0	NO	1073	123	YES	1022	0	NO	1145	123	YES
6	H St at SR 99 NB Off Ramp	167	121	NO	169	153	NO	171	125	NO	173	157	NO

ROADWAY ANALYSIS

Roadway average daily traffic (ADT) and capacities are shown in Table 5a. The volume-to-capacity ratios shown in Table 5b were calculated using the published roadway ADT information and future projected traffic volumes.

A volume-to-capacity ratio (v/c) equal to or less than 0.80 corresponds to a LOS of C, as defined in the Highway Capacity Manual. The City of Bakersfield operational goal for roadway capacity is LOS "C" or better. Mitigation is required where project traffic reduces the LOS to below an acceptable level, or where the pre-existing condition of the roadway is below an acceptable level of service and degrades below the pre-existing LOS with the addition of the project.

Table 5a
Roadway ADT & Capacity

Street	2019[1]	CUM[2] ADT	Project ADT	2019+Proj ADT	2021 ADT	2021+Proj CUM[2] ADT	2035 CUM[2] ADT	2035+Proj CUM[2] ADT	Existing Capacity	Mitigated Capacity
Taft Hwy (SR 119): Wible Rd to SR 99 SB Off Ramp/Campagnoni St	15821	1095	1131	16952	17140	18271	18797	19928	15000	30000
Taft Hwy: SR 99 SB Off Ramp/ Campagnoni St to S H St	15771	520	2403	18174	16464	18867	17727	20130	15000	30000
Taft Hwy: S H St to Project Entrance	10628	373	3392	14020	11119	14511	11982	15374	15000	30000
Taft Hwy: Project Entrance to Union Ave	10036	373	954	10990	10520	11474	11335	12289	15000	30000

[1]Cum = Other Project traffic added to future background volumes.

[2]See Table 8 for mitigation measures.

Table 5b
Roadway Level of Service

Street	v/c 2019	v/c 2019+Proj	(CUM[1]) 2021	(CUM[1]) 2021+Proj	(CUM[1]) 2035	v/c (CUM[1]) 2035+Proj	v/c(Mit[2]) 2035+Proj
Taft Hwy (SR 119): Wible Rd to SR 99 SB Off Ramp/Campagnoni St	**1.05**	**1.13**	**1.14**	**1.22**	**1.25**	**1.33**	0.66
Taft Hwy: SR 99 SB Off Ramp/ Campagnoni St to S H St	**1.05**	**1.21**	**1.10**	**1.26**	**1.18**	**1.34**	0.67
Taft Hwy: S H St to Project Entrance	0.71	**0.93**	0.74	**0.97**	0.80	**1.02**	0.51
Taft Hwy: Project Entrance to Union Ave	0.67	0.73	0.70	0.76	0.76	**0.82**	0.41

[1]Cum = Other Project traffic added to future background volumes.

[2]See Table 8 for mitigation measures.

QUEUE ANALYSIS

A queue length analysis was conducted at all stop-controlled freeway off ramps within the study area to evaluate the adequacy of the existing storage lengths. Table 9 below, shows the existing storage lengths, as well as the 95th percentile queue length determined for each traffic scenario analyzed.

Table 6
QUEUE ANALYSIS

Faciltiy Studied	Movement	Existing Storage (ft)	2019		2019 +Project		2021 Cum[1]		2021 Cum[1] +Project		2035 Cum[1]		2035 Cum[1] +Project	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
State Route 99 SB Off Ramp	SBL	330	258	225	222	245	242	239	246	263	254	253	266	273
	SBR	200	89	91	89	110	110	121	90	128	127	138	88	156
State Route 99 NB Off Ramp	EBRL	1000	49	73	65	73	61	77	66	77	57	73	69	82

NOTE: All queue lengths are shown in feet.

[1]Cum=Other Project traffic added to future background volumes.

VEHICLE MILES TRAVELED (VMT) EVALUATION

An evaluation of vehicle miles traveled (VMT) for project traffic was conducted based on applicable California Environmental Quality Act (CEQA) guidelines. The analysis involved comparing an estimate of VMT attributable to the project to a baseline VMT for the metropolitan Bakersfield area and assessing whether project VMT would result in a significant transportation impact.

Several factors were taken into consideration when estimating project VMT, including proposed land use, project trip type and distribution, and location of other similar land developments. As noted previously, given the project's close proximity to the SR 119 interchange at SR 99, it is estimated that 88 percent of traffic generated by the project would be diverted-link trips. These trips would exit SR 99, stop at the project site, and then return to the freeway in the same direction of travel as before the stop. In addition, it is estimated that 10 percent of project traffic would be pass-by trips. These trips are intermediate stops made between trip origin and ultimate destination and, like diverted-link trips, would exit the project in the same direction of travel as before the stop. Primary trips would comprise the remaining two percent of project traffic.

Based on the table below, it is anticipated that the project will result in a weighted average VMT of 1.10 miles per vehicle per day. An average daily VMT of 19.17 miles was obtained from the Kern Council of Governments (KernCOG) for use in this study. This baseline (2017) average VMT was developed based on household and employment populations in the metropolitan Bakersfield area as well as local and regional travel patterns.

Project Vehicle Miles Traveled

Trip Type	Project ADT	Trip Length (miles)			Miles Traveled	Average VMT
		State Route 99		Street Network		
		NB	SB			
Diverted-Link	4,500	1.09	1.37	- - -	5,535	1.23
Pass-By	511	- - -	- - -	- - -	0	0
Primary	102	- - -	- - -	1.00	102	1.00
Total	**5,113**				**Weighted Average**	**1.10**

Assumed 50/50 split of diverted-link trips from NB/SB SR 99
SR 99 NB/SB trip lengths based on distance between ramp exit/merge points and project entrance
Street network trip length based on proximity of similar land developments
Pass-by trips are drawn from adjacent street traffic, and therefore, do not contribute to project VMT

The average project VMT of 1.10 miles per vehicle per day is less than the baseline average VMT of 19.17 miles. Therefore, the project is not expected to result in a significant transportation impact.

MITIGATION

Intersection improvements needed by the year 2035 to maintain or improve the operational level of service of the street system in the vicinity of the project is shown in Tables 7 and 8.

Table 7
Future Intersection Improvements and Local Mitigation

#	Intersection	Total Improvements Required by 2035	Local Mitigation (Improvements not covered by RTIF)
1	Wible Rd & Taft Hwy (SR 119)	Add 1 EBT, 1 WBT	-

Notes: NB = Northbound; L = Left-Turn Lane; B = Southbound; T = Through Lane; WB = Westbound; R = Right-Turn Lane; EB = Eastbound

Table 8
Future Roadway Improvements and Local Mitigation

Roadway Segment	Total Improvements Required by 2035	Local Mitigation (Improvements not covered by RTIF)
Taft Hwy (SR 119): Wible Rd to SR 99 SB Off Ramp/ Campagnoni St	Add 2 Lanes	RTIF includes a project to improve the interchange.
Taft Hwy (SR 119): SR 99 SB Off Ramp/ Campagnoni St to S H St	Add 2 Lanes	RTIF includes a project to improve the interchange.
Taft Hwy (SR 119): S H St to Project Entrance	Add 2 Lanes	Taft Highway will be improved on the north side with the construction of the project. The south side is wide enough to be striped for two eastbound lanes.
Taft Hwy (SR 119): Project Entrance to Union Ave	Add 2 Lanes	RTIF includes a project to widen Taft Hwy.

SUMMARY AND CONCLUSIONS

This study evaluated the potential traffic impact of a proposed commercial development located at the northeast corner of South H Street and Taft Highway (State Route 119).

Intersection Level of Service Analysis

All intersections currently operate at an acceptable level of service and are anticipated to continue to do so through the opening year (2021).

By the year 2035, it is anticipated that the intersection of Wible Road & Taft Highway (SR 119) will operate below an acceptable level of service prior to the addition of project traffic. All remaining intersections operating at or above LOS C, are anticipated to continue to do so after the addition of project traffic in the future year (2035).

Roadway Level of Service Analysis

The roadway segments of Taft Highway (SR 119) from Wible Road to the State Route 99 Off Ramp and from the State Route 99 Off Ramp to South H Street operate below an acceptable level of service in the existing year (2019). With the addition of project traffic in the existing year, it is anticipated that the segment of Taft Highway (SR 119) from S H Street to the project entrance will operate below an acceptable level of service. As part of the project, the north side of Taft Highway will be widened and could be striped for four lanes along the project frontage.

By 2035, with the addition of project traffic, it is anticipated that the roadway segment of Taft Highway (SR 119) from the project entrance to Union Avenue will operate below an acceptable level of service with the addition of project traffic.

All mitigation items are covered by improvements built by the project or the RTIF program.

Queue Analysis

Based on the data shown in Table 6, the queue lengths for the movements studied at the State Route 99 southbound and northbound off ramps are not anticipated to exceed the available storage lengths.

Vehicle Miles Traveled (VMT) Evaluation

The average project VMT is less than the baseline average for the metropolitan Bakersfield area. Therefore, the project is not expected to result in a significant transportation impact.

Conclusion

One study intersection and all roadway segments were identified to need improvements by the year 2035 in order to maintain acceptable levels of service (shown in Tables 7and 8). These improvements are included on the RTIF facilities list. Provided the RTIF improvements are constructed, it is anticipated that the proposed commercial General Plan Amendment (GPA) and Zone Change will have minimal impact on traffic operations in the vicinity of the project.

REFERENCES

1. Annual Traffic Census, Kern COG
2. California Manual on Uniform Traffic Control Devices for Streets and Highways, 2014 Edition, Federal Highway Administration (FHA)
3. Highway Capacity Manual, Special Report 209, Transportation Research Board
4. Metropolitan Bakersfield General Plan, Circulation Element, 2014
5. Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE)

APPENDIX

Cumulative Projects List

DESCRIPTION	TYPE	ADDRESS
Hotel & Restaurant -78 rooms / 54,679 sf	COMMERCIAL	9800 & 9804 Compagnoni St
water well (#225-01)	INDUSTRIAL	8403 WIBLE RD
Unmanned water treatment facility	MISCELLANEOUS	3608 Brisbane Ave
2nd du	RESIDENTIAL	4602 CROSSHAVEN AVE (#B)
RETAIL BLDG - 22000 sf	COMMERCIAL	6630 COLONY ST
CHANGE OF USE TO COMMERCIAL	COMMERCIAL	655 PANAMA LN
Unmanned water treatment facility	INDUSTRIAL	3608 Brisbane Ave
WATER WELL TREATMENT	INDUSTRIAL	2009 Harry E Yarnell Ct
two retail bldgs (800 sf & 1,200 sf) & One Auto bldg 1000 sf	COMMERCIAL	655 Panama Lane & 6550 Lowry Str
CALWATER PUMPHOUSE - 480sf	INDUSTRIAL	8403 WIBLE RD
Multi-Tenant bldg w/drive-thru	COMMERCIAL	9801 COMPAGNONI ST
C-Store & Service Station - 12126 sf	COMMERCIAL	2201 TAFT HWY

DRAFT Technical Paper:

Love's Trip Generation and Travel Characteristic Study

DRAFT

Prepared for:

Love's Travel Stops & Country Stores

Prepared by:

omni · means
A GHD Company

Love's Trip Generation and Travel Characteristics Study

Prepared for:
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Vehicle and Truck Trip Survey (Questionnaire)
Vehicle and Truck Trip Survey Summary Results by Location
Driveway Counts (Metro Traffic Data, Inc.)
Diverted Link Trip Lengths (Lane Engineers, Inc.)

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Introduction

Transportation planning and traffic engineering rely on trip generation analysis to estimate the number of vehicle trips that will be generated from a proposed development. Planners and engineers can then analyze a project's impact on traffic congestion and air quality, particularly in California. However, existing methods utilized to determine actual traffic impacts at truck stops are not consistent with current conditions occurring at these multi-purpose facilities.

With past limited and applicable trip generation data, studies available for truck stops do not include the array of services provided in modern travel stops. Traffic consultants and others have turned to combining available trip generation studies, largely available from the Institute of Transportation Engineers (ITE), to estimate proposed truck stop trip generation to identify potential traffic impacts and vehicle miles travelled (VMT[1]) based upon trip generation.

These often include many assumptions to account for pass-by trips, diverted-link trips and internal capture rates to develop reasonable trip generation. This approach can potentially over-predict trip generation as there are many multi-purpose benefits from this land use, including:

- Fuel sales;
- Retail purchases;
- Restaurants (fast-food and sit-down);
- Restrooms;
- Rest areas;
- Parking;
- Scales;
- Tire care center;
- Laundry facilities;
- ATMs; and,
- Other truck stop uses dependent upon region.

Due do the uncertainty of industry standard assumptions, local and state reviewing agencies often scrutinize these assumptions as a result of limited documentation. When assumed discounts need to be applied to trip generation rates for stand-alone commercial uses, it is difficult to determine actual trip generation rates of these land uses.

Additionally, it is difficult to provide a generic truck stop description as a result of the commercial uses that can be assembled in any given truck stop. In an effort to collect additional data and further research trip generation characteristics of Love's Travel Stops & Country Store sites in California, data for several additional sites in the same retail chain were collected in different geographical areas of the state and the design of the in-field survey questionnaire was in draft form.

[1] VMT is calculated by multiplying daily traffic on a roadway segment by the length of the segment.

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With the potential for such over prediction of trip generation from truck stops, the ramifications are potentially significant. Therefore, the need for accurate, representative and transportation industry recognized trip generation rates and travel characterizations is imperative.

VMT is a critical component of this study. With passage of SB 743 in California, a new process changes the way that transportation impacts are analyzed under the California Environmental Quality Act (CEQA). Specifically, SB 743 requires the Office of Planning & Research (OPR) to amend the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. Specifically, assessment of VMT, thresholds of significance and mitigation measures will be used to address transportation impacts. In summary, it was determined by the legislature that VMT is the most appropriate measure for transportation impacts.

This Technical Paper provides data to assist in documentation of actual VMT based upon diverted link distance between the origin and destination of the trip end. Today, VMT is calculated based on land use or use of technical travel demand forecast models; however, based upon the results of this study, VMT should only be calculated based upon diverted trip distance rather than overall trip potential, thereby providing a more accurate representation of VMT. This calculation is further discussed in the Conclusions & Recommendations section of this Technical Paper.

As a result, Love's Travel Stops and Country Stores has embarked on an undertaking to determine actual trip generation characteristics at six (6) locations throughout California. Therefore, the objective of this research study related to trip generation characteristics of Love's Travel Stops in California with the intention to determine if trip generation characteristics of these facilities differs from those contained in the *Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition.* Importance with following ITE's established guidelines of conducting information report study are provided below.

ITE Guidance

Per ITE standard guidelines, an ITE information report study should include the following components:

- Phase 1 – Design Industry Recognized (ITE) Trip Generation and Travel Characterization Methodology;
- Phase 2 – Conduct In-Field Surveys Consistent with the Prescribed Methodology Developed in Phase 1;
- Phase 3 – Prepare a Technical Paper on the Analysis of In-Field Surveys, Summarizing Findings, Conclusions & Recommendations; and,
- Phase 4 – Publish the Research Study and Share at Industry Conferences *(To Be Determined)*.

As a result, the following sections were prepared.

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Phase 1 - Design Industry Recognized Trip Generation and Travel Characterization Methodology

Current Methodology

Today's standard practices used to develop trip generation rates for truck stops is derived from the *Trip Generation Manual*, published by ITE. Many versions have been published with the most recent being the *10th Edition*. ITE Land Use 950: Truck Stop description is as follows:

> *A truck stop facility is a facility located on or near major roadways and provides refueling, food, and other services to motorists and truck drivers. These facilities typically contain convenience stores, showers, restaurants and on-site truck parking spaces. Gasoline/service station (Land Use 944) and gasoline/service station with convenience market (Land Use 945) are related uses.*

Trip generation rates for this Land Use 950 were developed from eight studies surveyed in the 2000s and 2010s in Colorado, Florida, Tennessee, Vermont and Virginia. Trip generation rates were calculated for 1,000 sq. ft. gross floor area on a weekday with peak hour of adjacent street traffic, one hour between 4:00 and 6:00 p.m. However, this data does not include all of the amenities of modern travel stops (discussed below) and certain attributes of the data collected for Land Use 950, e.g., vehicle fueling positions, contain a small sample size. As a result, transportation professionals have sought solutions outside of solely utilizing Land Use 950.

Alternatives include development of trip generation from other land uses provided in the ITE Manual, specifically Land Uses 853, 944 and 945. Table 1 summarizes *ITE Trip Generation (10th Edition)* Land Uses 853, 944, 945 and 950 and provides a brief description of the primary activity of business and weekday trip generation average rates per vehicle fueling position and per 1,000 square feet of floor area. Table 1 further identifies average trip generation rate by time of day for peak hour of adjacent street, i.e., AM peak hour of generator (between 7:00 to 9:00 a.m.) and PM peak hour of generator (between 4:00 and 6:00 p.m.). The average weekday trip rate (the weighted average of the number of vehicle trips or trip ends per unit of independent variable) is shown in Table 1.

TABLE 1
ITE TRIP GENERATION, 10TH EDITION, VOLUME 3

			Weekday Trip Generation Average Rates			
			Trips per Vehicle Fueling Position		Trips per 1,000 Sq. Ft. Gross Floor Area	
Land Use Title	ITE Land Use Code	Primary Business Activity	AM Peak Hour of Adj. Street	PM Peak Hour of Adj. Street	AM Peak Hour of Adj. Street	PM Peak Hour of Adj. Street
Convenience Market w/ Gasoline Pumps	853	Selling of Convenience Items	16.57	19.07	40.92	50.92
Gasoline Service Station	944	Fueling of Motor Vehicles	12.16	13.87	N/A	N/A
Gasoline Service Station w/ Convenience Market	945	Fueling of Motor Vehicles	10.16	13.51	82.13	97.47
Truck Stop	950	Refueling, Food and Other Services	7.18[1]	8.41[1]	26.49	22.73

[1] *Small sample size (1 survey)*

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Table 1 demonstrates a noticeable difference between trip generation rates of Land Use Code (LUC) 853, where the primary business activity is selling convenience items, and LUCs 944 and 945, where fuel sales are the primary business activity. LUC 950, which provides fuel sales, food and other services, also demonstrates differences in trip generation rates [with its minor sample size]. Based upon data provided in *ITE Trip Generation*, LUC 853 generates more trips per vehicle fueling position (VFP) during both AM and PM peak periods, but much fewer trips than LUC 945 per gross floor area (GFA). LUC 950 has the lowest trip generation rates per GFA.

These observations show that the independent variable associated with the primary business activity VFP and GFA play an important role in determining the trip generation rate. Table 1 also demonstrates that PM peak hour rates generate more traffic than the AM peak hour rate based upon adjacent street demand.

The physical type of fast food restaurant is also a factor in user (customer) choice. Drive-thru vs. walk-up or sit down establishments attract different types of clientele. Some travel stops provide either both or have one or the other [with or without drive-thru]. Additionally, the brand name of restaurant is critical to on-site sales based upon discussions with regional managers. Regional influences for popular restaurants, be they fast food or sit down, vary for any given truck stop. As a result, this variable may constitute development of a special trip generation rate, e.g., convenience market with fast food restaurant (with and without drive-thru) and with gasoline pumps.

Following use of these common high trip generating land uses, it is shared practice to apply trip reductions for pass-by trips, diverted-link trips, internal capture rates and other trip reduction strategies identified in the ITE *Trip Generation Handbook*. As a result, additional variables and assumptions (trip reduction rates) are applied to the LUC, thus creating differing trip generation rates at varying locations and jurisdictions.

However, these land uses are not compatible to specific modern travel stops developed in recent years. For example, the land uses identified above [944, 945 & 950] do not encompass the variety of services provided at the modern Love's Travel Stops & Country Stores.

The description of a Love's Travel Stops & Country Stores is as follows:

> *Truck stop and travel center facilities that provide professional truck drivers and motorists with 24-hour access to purchase gasoline, diesel fuel, CNG, travel items, electronics, snacks, light grocery items and more, as well as a wide variety of restaurant (both drive-through and walk up) offerings. ATMs, CAT scales, truck parking, private showers, laundry services, RV dump service, WiFi and other amenities are also offered at select locations. Love's Truck Tire Care offers heavy duty tire care, including TirePass, light mechanical services and roadside assistance. Love's Hospitality offers hotels and storage rental locations.*

As described above, today's modern travel stops and/or travel centers offer many more services for the travelling public and professional truck drivers that use major road facilities (freeways, highways, etc.). The intention of Love's Travel Stops & Country Stores is to facilitate drivers that are on the roadway system and need to stop for services. As such, the trips that use a Love's facility are not intended to be primary trips. With the exception of home-work trips for employees, the trip types are generally pass-by or diverted-link.

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The above land use description suggests that the Love's Travel Stops & Country Store sites have different trip generation characteristics from the study sites included in ITE LUCs 853, 944, 945 and 950, and may need to be classified under a new land use code in *Trip Generation*, or combined with one or more land use types to reflect today's modern travel stops as designed by Love's. In general, the trend of modern travel stops may not be just a characteristic of future Love's, but could be applicable to future modern truck stops proposed by others.

Phase 2 – Data Collection

Survey Sites

The survey sites included in this study were chosen in varying geographic regions in the State of California. Six (6) Love's Travel Stops & Country Stores were selected of nine (9) total locations serving California. Figure 1 below identifies the Love's Travel Stops in their geographic area. Table 2 describes existing sites configurations, including square footage, fueling positions (auto/truck), primary restaurant, tire shop facility and highways/cross streets. Additionally, Figure 2 identifies each Love's Travel Stops study locations (Google aerial image), adjacent street and project driveway operations (access points) that were evaluated.

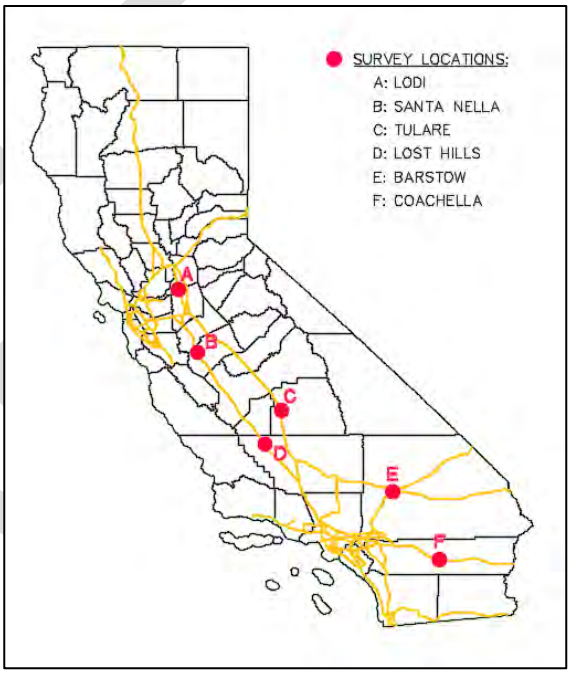


FIGURE 1: LOVE'S TRAVEL STOPS SURVEY LOCATIONS

In order to determine the days and times of the in-person travel survey, it was first necessary to define peak periods of usage at the individual locations. Therefore, weekday daily traffic counts were conducted along the primary street/road accessing the Love's facility to understand adjacent street traffic in relation to driveway volumes.

Based upon the peak day and time period of the daily traffic counts, peak period driveway volumes (recorded on video) were observed and documented. Additionally, the peak period times were selected to conduct in-person travel surveys the following week, which generally occurred in the early afternoon. This provided a reasonable time period to collect necessary data.

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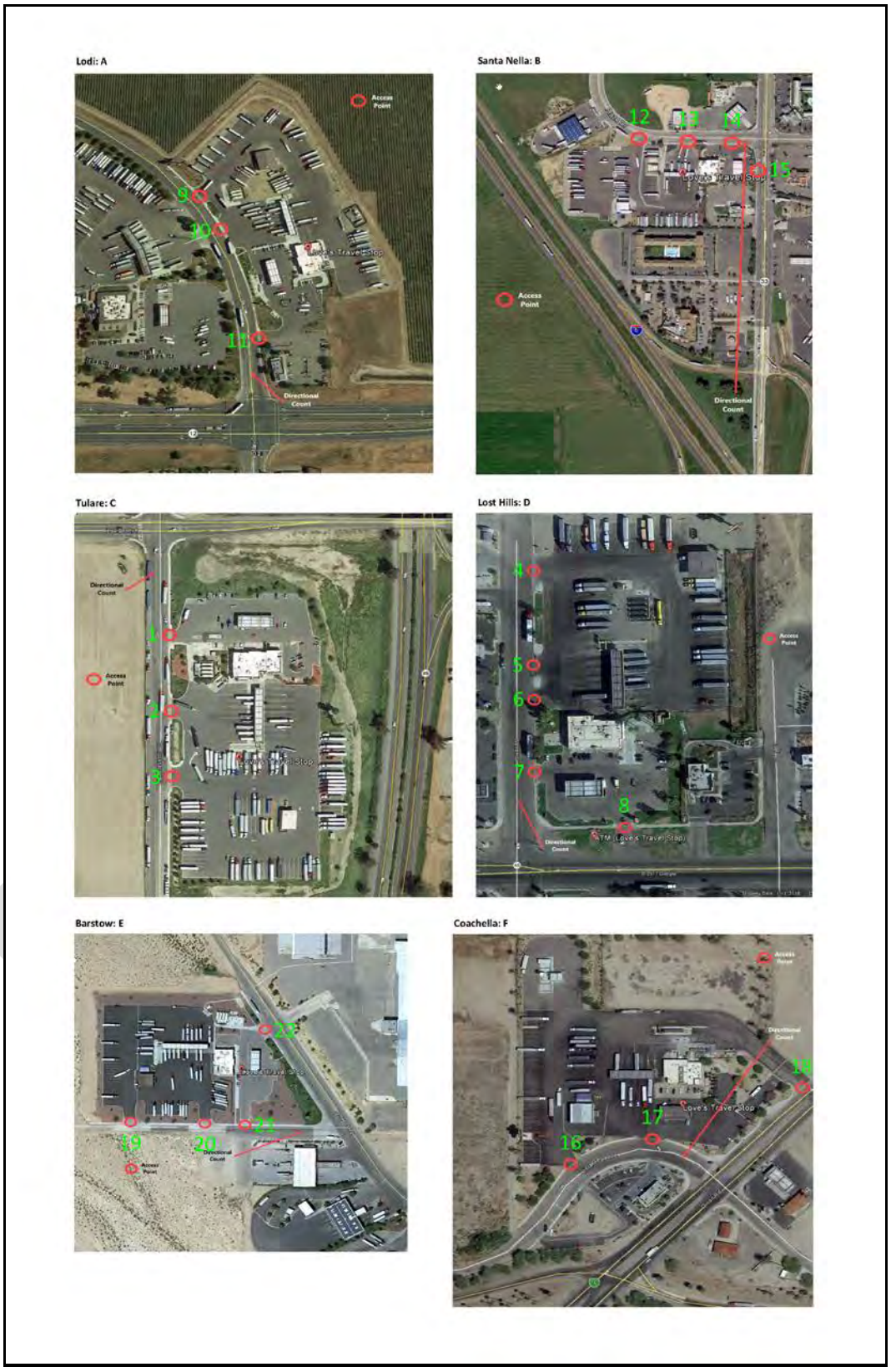
TABLE 2
LOVE'S TRAVEL STOPS FEATURES

	Love's Locations (CA)	Store #	Approximate Building Size	Auto Fueling Positions	Truck Fueling Positions	Restaurant	Tire Care	Adjacent Highway	Intersecting Local Road
A	**Lodi**	538	10,500 SF	16	8	Arby's	Yes	I-5	SR-12
B	**Santa Nella**	441	9,900 SF	12	8	Del Taco	Yes	I-5	SR-33
C	**Tulare**	382	10,400 SF	16	9	McDonald's, Subway	Yes	SR-99	Paige Avenue
D	**Lost Hills**	230	7,900 SF	12	7	Arby's	Yes	I-5	SR-46
E	**Barstow**	374	9,400 SF	16	10	Chester's, Godfathers, Love's Subs (no drive-thru's)	Yes	I-15	Lenwood Road
F	**Coachella**	207	7,300 SF	12	6	Carl's Jr.	Yes	I-10	Dillon Road

Notes: SF = Sq. Ft.

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FIGURE 2: LOVE'S TRAVEL STOPS GOOGLE AERIAL PHOTO SURVEY LOCATIONS



Under this phase, Omni-Means/GHD and Project Team, consisting of Love's representatives and Lane Engineers, Inc., developed the in-field survey questionnaires.

In-Field Survey Questionnaires

Under this task the Project Team, with collaboration with Metro Traffic Data, Inc., prepared a list of questions and coordinated to schedule in-person surveys. The survey was modified as necessary based upon correspondence with the Project Team. A site visit was conducted by Omni-Means/GHD and Lane Engineers, Inc., to document in-field survey techniques and finalize in-person survey questions. The following is the final list of questions for the in-field survey:

Survey Questionnaire

1. ***Where did you begin your trip?***
2. ***Where will you end your trip?***
3. ***Are you a trucker or an auto costumer?***
4. ***Is this your only stop on your trip today?***
5. ***Did you exit the freeway to get to Love's Travel Stop?***
6. ***What are the PRIMARY and SECONDARY purpose(s) for stopping at Love's Travel Stop? (Two Part Question)***
    a. ***Gasoline or Diesel***
    b. ***Convenience Store***
    c. ***Restaurant***
    d. ***Restroom***
    e. ***Tire Care Center (Truckers Only)***
    f. ***Other***
7. ***If you did not stop here, would you have stopped at another nearby location on your trip for purposes identified in Questions #6.***
8. ***What do you like best about Love's Travel Stop***
    a. ***Fuel Prices***
    b. ***Food***
    c. ***Ease of Access***
    d. ***Variety of Services/Convenience***
    e. ***My Love Rewards***

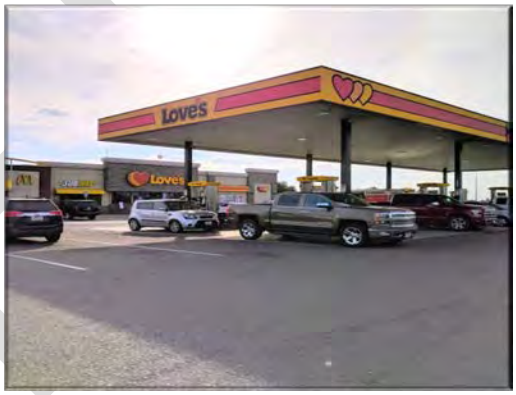


Photo taken at the Love's Truck Stop (Tulare location).

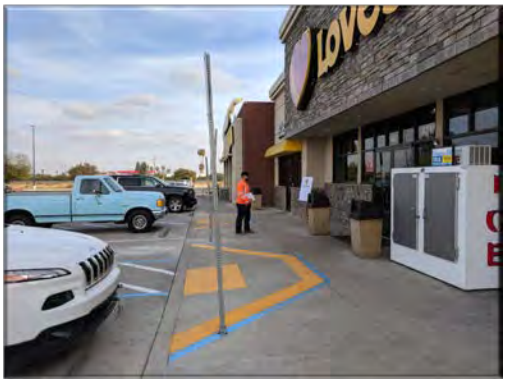


Photo taken at the Love's Truck Stop (Tulare location).

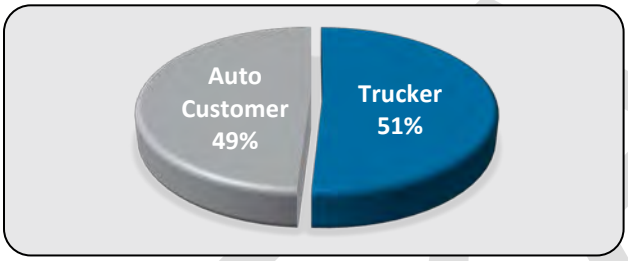
An advantage to in-field surveys is that the research produces data based on real-world observations (empirical data). In order to substantiate the data collected the sample size was a factor that the Project Team focused on. Therefore, a minimum of 100 samples were collected at each site. As an incentive to the patrons participating in the in-field survey, the Project Team offered a $5 Love's Travel Stop gift card. As the number of sample size validates the in-field survey, the time that the in-field survey is completed is also is a factor. In terms of capturing the peak operations of the facility, the surveys were generally conducted during the peak hour of driveway operations.



Photo taken at the Love's Truck Stop (Tulare location).

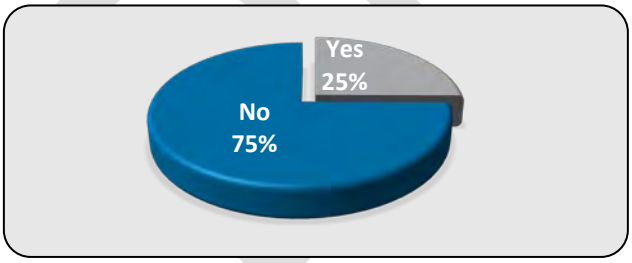
A summary of the results of the survey questions (3-8) for the six (6) sites are illustrated in the following pie charts along with the total number of participants:

3. Are you a trucker or an auto customer?



Trucker	*337*	*51%*
Auto Customer	*323*	*49%*
Total	***660***	***100%***

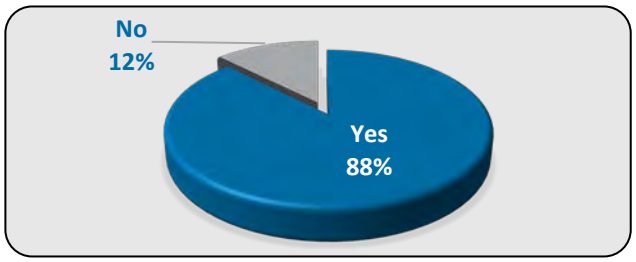
4. Is this your only stop on this trip today?



Yes	*166*	*25%*
No	*494*	*75%*
Total	***660***	***100%***

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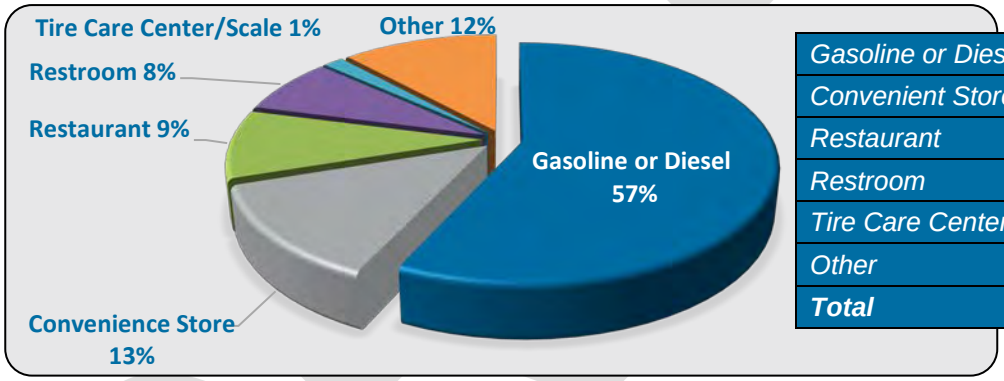
5. Did you exit the freeway to get to Love's Travel Stop?



Yes	*578*	*88%*
No	*82*	*12%*
Total	***660***	***100%***

6. What are the Primary and Secondary purpose(s) for stopping at Love's Travel Stop?

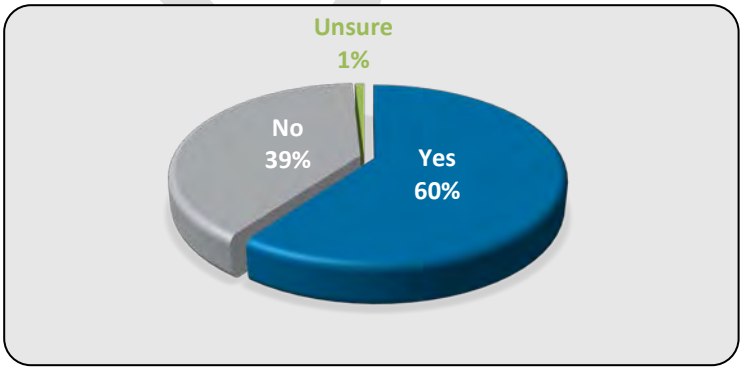
a. Gasoline or Diesel
b. Convenient Store
c. Restaurant
d. Restroom
e. Tire Care Center
f. Other



primary

Gasoline or Diesel	*376*	*57%*
Convenient Store	*85*	*13%*
Restaurant	*61*	*9%*
Restroom	*50*	*8%*
Tire Care Center/Scale	*10*	*2%*
Other	*78*	*12%*
Total	***660***	***100%***

7. If you did not stop here, would you have stopped at another nearby location on your trip for purposes identified in Question #6?

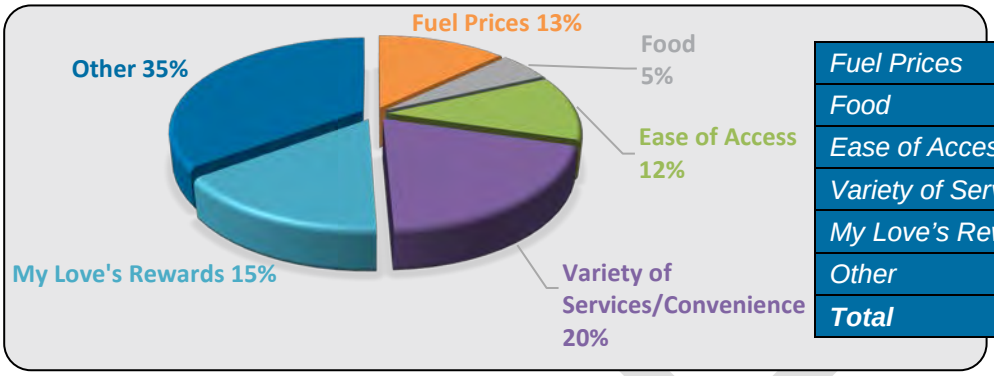


Yes	*394*	*60%*
No	*256*	*39%*
Unsure	*6*	*1%*
Total	***656***	***100%***

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8. What do you like best about Love's Travel Stops?

a. Fuel Prices
b. Food
c. Ease of Access
d. Variety of Services
e. My Love's Rewards
f. Other



Fuel Prices	*82*	*13%*
Food	*33*	*5%*
Ease of Access	*74*	*12%*
Variety of Services	*125*	*20%*
My Love's Rewards	*99*	*15%*
Other	*223*	*35%*
Total	***636***	***100%***

The in-field survey data collected at the six (6) Love's Travel Stops & Country Stores revealed that the majority of patrons are truckers (51%). Additionally, the primary business of Love's Travel Stops & Country Stores to be linked to truck drivers that utilize the vehicle fueling services. This is further validated by participant's answers to Question #6 that demonstrates 57% of respondents stated gasoline or diesel is the primary reason for stopping at Love's Truck Stop & Country Stores. These responses further reinforce that refueling is the primary purpose of the stop along the survey participant's route.

A key finding that resulted from the in-person survey was revealed in Question #5: Did you exit the freeway to get to the Love's Travel Stop? The overwhelming percentage (88% of participants) indicated that they exited the freeway to get to the Love's Travel Stop. This can be interpreted that these trip types [coming off of the freeway] are diverted link trips. When calculating VMT for this type of use, the diverted trip length from freeway exit to destination to freeway entrance can be summed per trip to derive VMT for 88% of the all vehicles.

Daily Traffic Volumes

Based upon the daily traffic counts collected by Metro Traffic Data, Inc., Omni-Means/GHD assessed adjacent street traffic volumes at the six (6) study sites. Daily counts were collected for a 3-day period beginning on Tuesday, November 7, 2017, thru Thursday, November 9, 2017. Daily and peak period of adjacent street peak hour are important components of trip generation analysis when comparing to peak hour of generator (i.e., project site traffic).

Table 3 below summarizes the 24-hour count for each of the six (6) study sites. This table identifies the average daily traffic (ADT) and AM/PM Peak period of the adjacent street. Proximity to nearest adjoining highway is a contributing factor for the daily and peak hour volume totals along the adjacent street corridor.

TABLE 3
LOVE'S TRAVEL STOPS DAILY TRAFFIC VOLUME AND PEAK HOURS

	Tulare		Lost Hills		Lodi		Santa Nella		Coachella		Barstow	
ADT Tues. (11/9/17)	7,580		3,592		11,190		3,624		4,687		2,605	
AM Peak	449	11:00-12:00	211	9:30-10:30	698	10:00-11:00	214	8:15-9:15	262	9:00-10:00	155	6:00-7:00
PM Peak	459	12:00-1:00	229	3:30-4:30	723	3:00-4:00	270	1:30-2:30	325	1:15-2:15	155	12:00-1:00
ADT Wed. (11/10/17)	7,361		3,355		10,879		3,537		4,812		2,601	
AM Peak	481	6:45-7:45	173	6:30-7:30	687	11:00-12:00	192	7:30-8:30	277	10:30-11:30	156	9:00-10:00
PM Peak	489	12:00-1:00	226	4:30-5:30	686	3:00-4:00	238	1:45-2:45	348	12:30-1:30	148	1:00-2:00
ADT Thurs. (11/11/17)	7,847		4,065		11,365		4,076		5,305		2,696	
AM Peak	469	7:15-8:15	201	8:30-9:30	695	11:00-12:00	236	11:00-12:00	329	9:45-10:45	149	6:00-7:00
PM Peak	489	12:15-1:15	242	4:15-5:15	735	12:00-1:00	262	4:15-5:15	335	12:45-1:45	172	3:45-4:45
ADT Total	**22,788**		**11,012**		**33,434**		**11,237**		**14,804**		**7,902**	
ADT Average	**7,596**		**3,671**		**11,145**		**3,746**		**4,935**		**2,634**	

As shown in Table 3, adjacent street average traffic volumes vary substantially, i.e., they range from approximately 2,600 to 11,150, depending upon geographic location of the site. In addition, the traffic generated at each project site have is a range of other attributes, including proximity of a state, interstate highway facility, or major arterial street; traffic volumes of highway facility; location of nearest competitor; on-site service provided; etc.

Table 4 shows daily traffic volumes and peak hours at the nearest adjoining street or street segment that provide direct access to the Love's Travel Stop. Traffic data at these locations represent a 3-day average (Tuesday thru Thursday) along the local street. Additionally, Table 4 shows daily traffic volumes of nearest adjoining highway volumes (per Caltrans 2016), including a breakdown between vehicle and truck ADT and percentage trucks.

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TABLE 4
LOVE'S TRAVEL STOPS DAILY TRAFFIC VOLUMES AND PEAK HOURS

	Nearest Adjoining Street/Street Segment				Nearest Adjoining Highway Volumes (per Caltrans 2016)				
	Love's Location	Street	Segment	3-Day ADT Average*	Adjoining Major Highway	Intersecting Local Road	Vehicle ADT	Truck ADT	Truck %
A	**Lodi**	Thornton Road	North of SR12	11,145	I-5	SR-12	58,100	11,879	20.5
B	**Santa Nella**	Plaza Drive	West of Santa Nella Blvd	3,746	I-5	SR-33	29,100	8,780	30.2
C	**Tulare**	Blackstone Street	South of Paige Avenue	7,596	SR-99	Paige Avenue	57,000	13,678	24.0
D	**Lost Hills**	Warren Street	North of SR 46	3,671	I-5	SR-46	40,500	10,530	26.0
E	**Barstow**	High Desert Road	West of Lenwood Road	2,634	I-15	Lenwood Road	58,000	13,869	23.9
F	**Coachella**	Vista Del Norte	West of Dillon Road	4,935	I-10	Dillon Road	27,000	8,588	35.5

** 3-Day ADT Average from Table 2*

Project Traffic Volumes

As a result of video data collection efforts, Omni-Means/GHD evaluated project driveway operations in terms peak periods and traffic volumes. Typical AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak hour driveway traffic volumes were extracted from video data. The data was further delineated between passenger cars (P) and trucks (T) at each study site and summarized for the 6 study sites. Because all Love's Travel Stops have multiple driveways, the driveway #s were also identified, as previously shown in Figure 2. Table 5 summarizes daily, AM and PM driveway trips at each location and summarizes the results cumulatively.

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TABLE 5
LOVE'S TRAVEL STOPS DAILY DRIVEWAY OPERATIONS VOLUMES AND PEAK HOURS

Location	Driveway (#)	Daily Trips				AM Peak Hour (7:00 - 9:00 AM)				PM Peak Hour (4:00 - 6:00 PM)			
		Ins (P)	Ins (T)	Outs (P)	Outs (T)	Ins (P)	Ins (T)	Outs (P)	Outs (T)	Ins (P)	Ins (T)	Outs (P)	Outs (T)
Tulare	1	1,917	87	1,936	99	106	7	102	10	115	2	121	2
	2	44	1,149	17	83	3	54	1	3	2	63	1	3
	3	40	208	63	1,269	5	15	5	70	2	14	4	63
Subtotal		*2,001*	*1,443*	*2,016*	*1,451*	*114*	*77*	*109*	*83*	*119*	*80*	*126*	*68*
Lost Hills	4	15	820	7	182	0	42	0	12	2	45	1	7
	5	3	26	14	420	0	1	1	20	0	1	1	20
	6	17	52	11	295	2	2	1	14	1	3	1	15
	7	174	11	720	31	8	0	31	0	10	0	42	1
	8	845	27	299	13	34	1	8	1	46	0	19	0
Subtotal		*1,055*	*936*	*1,051*	*941*	*45*	*47*	*40*	*47*	*58*	*50*	*64*	*44*
Lodi	9	24	171	35	952	0	6	1	52	0	8	3	38
	10	305	853	247	77	12	45	12	2	22	35	20	7
	11	1,340	41	1,397	45	65	5	63	3	91	3	99	3
Subtotal		*1,669*	*1,066*	*1,679*	*1,074*	*77*	*56*	*77*	*57*	*113*	*46*	*122*	*48*
Santa	12	14	254	19	988	1	16	2	54	1	17	1	45
Nella	13	12	744	8	17	0	38	0	0	0	40	0	0
	14	397	26	145	11	19	3	5	0	28	2	11	1
	15	111	4	390	24	8	0	19	1	4	0	27	1
Subtotal		*534*	*1,028*	*562*	*1,041*	*28*	*56*	*26*	*56*	*33*	*58*	*39*	*47*
Coachella	16	18	209	16	440	0	8	1	35	1	11	0	21
	17	900	70	919	903	47	4	44	38	55	4	64	38
	18	21	1,128	12	57	1	52	1	1	1	52	1	5
Subtotal		*939*	*1,406*	*946*	*1,401*	*48*	*64*	*45*	*74*	*57*	*67*	*66*	*65*
Barstow	19	7	27	25	1,036	0	1	1	52	1	3	3	52
	20	24	1,010	10	61	1	50	1	2	0	57	1	2
	21	88	14	168	21	4	1	9	1	6	2	12	3
	22	645	30	569	22	37	2	28	2	46	1	43	1
Subtotal		*764*	*1,081*	*772*	*1,141*	*42*	*55*	*38*	*57*	*54*	*63*	*58*	*58*
TOTAL (AVG.)		***6,962***	***6,961***	***7,026***	***7,048***	***355***	***354***	***335***	***374***	***433***	***364***	***475***	***329***

(P) = Passenger; (T) = Trucks

Table 5 demonstrates that although passenger vehicles and trucks vary by specific location, overall (when summarizing the 6 data sets), there is a fairly even split between the vehicle types, i.e., cars vs. trucks. This is very similar to Travel Survey Response #3 [*Are you a trucker or an auto customer?*], where 51% of the respondents said they were truck customers and 49% of the respondents said that they were automobile customers.

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Phase 3 – Summary, Conclusions and Recommendations

Trip Generation Rates Summary

Based upon the data collected in Phase 2, trip generation rates were developed for each location and cumulatively for all 6 locations. The trip generation rates were calculated for typical weekday conditions only. Data was not collected during the weekend. However, trip generation rates were calculated for vehicle fueling positions (VFP) and per gross floor area (GFA) per 1,000 sq. ft. of building area. Daily, AM and PM trip rates and percentages (ins and outs) are shown for each category.

Vehicle Fueling Positions

Table 6 identifies number of vehicle fueling positions (VFP), trips, rate, and in and out percentage for daily, AM and PM periods at each of the sites. The last row of Table 6 shows the cumulative average of the VFP daily and peak hour rates. Additionally, Figures 3 – 5 show the cumulative average vehicle trip generation for VFP under Weekday, AM and PM conditions, respectively.

TABLE 6
LOVE'S TRAVEL STOPS VFP DAILY AND PEAK HOURS RATES

	Unit	Daily Trips/Rate		AM Peak Hour Trips/Rates						PM Peak Hour Trips/Rates					
Location	VFP	Daily Trips	VFP Rate	AM Peak Hour Trips	AM Rate	AM Peak Hour (Trips In)	AM Peak Hour (Trips Out)	In (%)	Out (%)	PM Peak Hour Trips	PM Rate	PM Peak Hour (Trips In)	PM Peak Hour (Trips Out)	In (%)	Out (%)
Tulare	25	6,911	276.43	383	15.31	191	192	0.50	0.50	393	15.72	199	194	0.51	0.49
Lost Hills	19	3,982	209.60	179	9.42	92	87	0.51	0.49	216	11.39	108	108	0.50	0.50
Lodi	24	5,488	228.67	267	11.11	133	134	0.50	0.50	328	13.68	159	169	0.48	0.52
Santa Nella	20	3,165	158.27	167	8.35	85	82	0.51	0.49	177	8.85	91	86	0.52	0.48
Coachella	18	4,692	260.69	231	12.85	112	119	0.48	0.52	254	14.09	123	130	0.49	0.51
Barstow	26	3,758	144.55	191	7.36	97	95	0.51	0.49	233	8.97	117	117	0.50	0.50
Average	**22**	**4,666**	**213.03**	**236**	**10.73**	**118**	**118**	**0.50**	**0.50**	**267**	**12.12**	**133**	**134**	**0.50**	**0.50**

VFP = Vehicle Fueling Positions (number of pumps)

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FIGURE 3: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER VFP (WEEKDAY)

Love's Travel Stop

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. Num. of Vehicle Fueling Positions:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
213.03	144.55 - 273.43	3.41

Data Plot and Equation

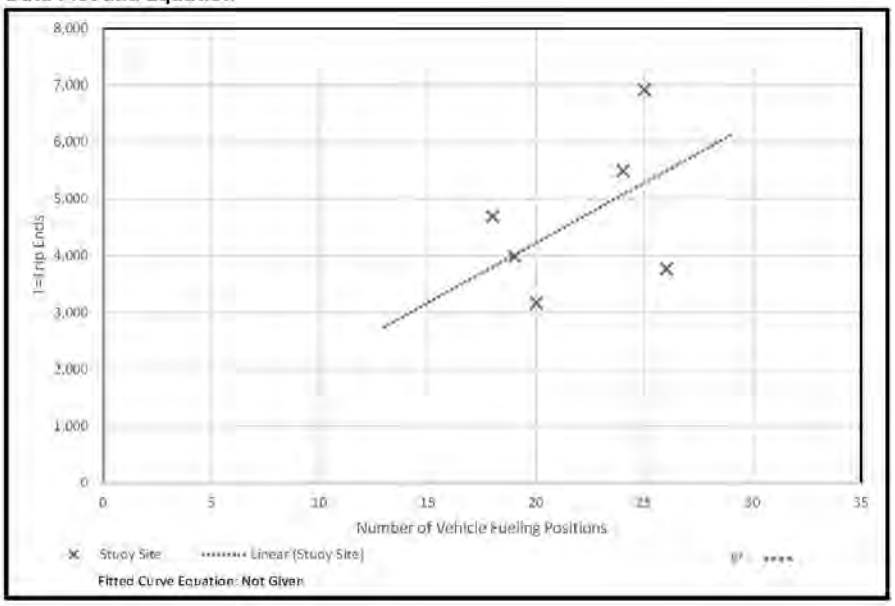


FIGURE 4: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER VFP (AM PEAK)

Love's Travel Stop

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,**
	AM Peak Hour of Generator
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. Num. of Vehicle Fueling Positions:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
10.73	7.36 - 15.31	3.41

Data Plot and Equation

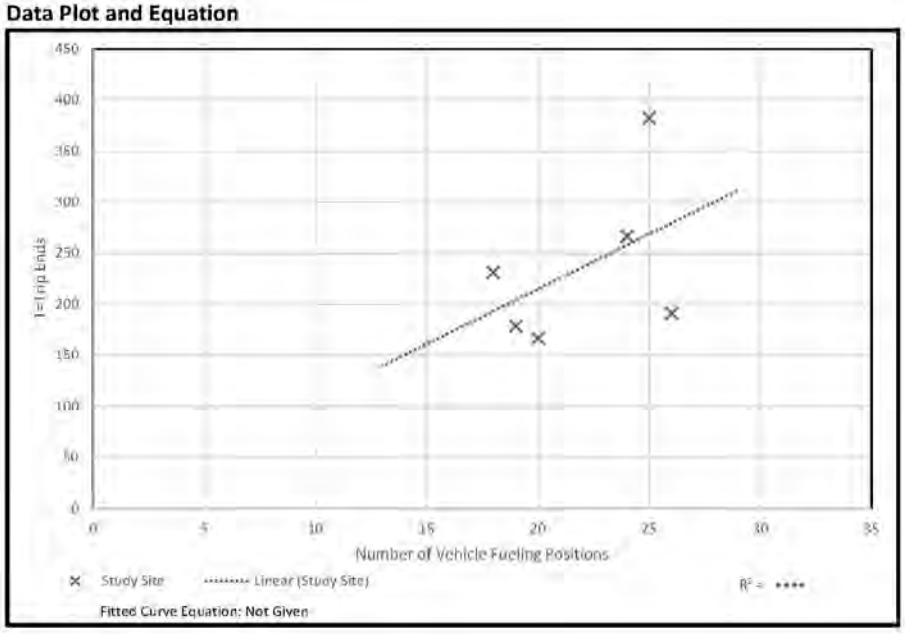


FIGURE 5: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER VFP (PM PEAK)

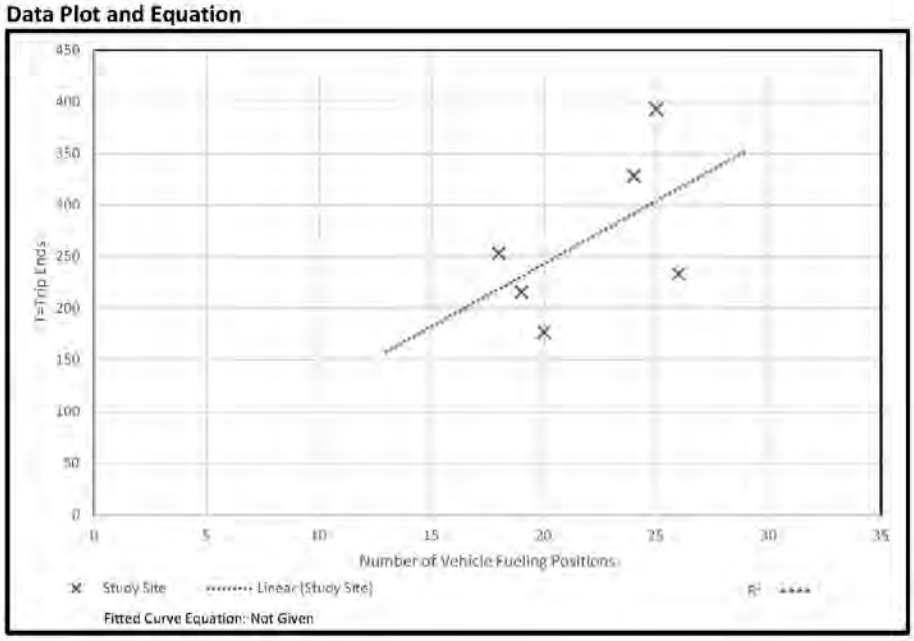
Love's Travel Stop

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,**
	PM Peak Hour of Generator
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. Num. of Vehicle Fueling Positions:	22
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
12.12	8.97 - 15.72	3.41

Data Plot and Equation



Gross Floor Area

Table 7 identifies number of gross floor area (GFA x 1,000 sf), trips, rates, and ins and outs percentage for daily, AM and PM periods at each of the sites. The last row of Table 7 shows the cumulative average of the GFA daily and peak hour rates. Additionally, Figures 6 – 8 show the average vehicle trip generation for GFA under Weekday, AM and PM conditions, respectively.

TABLE 7
LOVE'S TRAVEL STOPS GFA DAILY AND PEAK HOURS RATES

	Unit (x 1,000)	Daily Trips/Rate		AM Peak Hour Trips/Rates						PM Peak Hour Trips/Rates					
Location	**GFA (sf)**	**Daily Trips**	**GFA Rate**	**AM Peak Hour Trips**	**AM Rate**	**AM Peak Hour (Trips In)**	**AM Peak Hour (Trips Out)**	**In (%)**	**Out (%)**	**PM Peak Hour Trips**	**PM Rate**	**AM Peak Hour (Trips In)**	**AM Peak Hour (Trips Out)**	**In (%)**	**Out (%)**
Tulare	10.4	6,911	664.49	383	36.79	191	192	0.50	0.50	393	37.79	199	194	0.51	0.49
Lost Hills	7.9	3,982	504.09	179	22.66	92	87	0.51	0.49	216	27.38	108	108	0.50	0.50
Lodi	10.5	5,488	522.67	267	25.40	133	134	0.50	0.50	328	31.27	159	169	0.48	0.52
Santa Nella	9.9	3,165	319.73	167	16.87	85	82	0.51	0.49	177	17.88	91	86	0.52	0.48
Coachella	7.3	4,692	642.79	231	31.69	112	119	0.48	0.52	254	34.75	123	130	0.49	0.51
Barstow	9.4	3,758	399.82	191	20.35	97	95	0.51	0.49	233	24.82	117	117	0.50	0.50
Average	**9.2**	**4,666**	**508.93**	**236**	**25.63**	**118**	**118**	**0.50**	**0.50**	**267**	**28.98**	**133**	**134**	**0.50**	**0.50**

GFA = Gross Floor Area per 1,000 sq.ft. (sf)

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FIGURE 6: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER GFA (WEEKDAY)

Love's Travel Stop

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. 1000 Sq.Ft. GFA:	9.2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
508.93	319.73 - 664.49	1.34

Data Plot and Equation

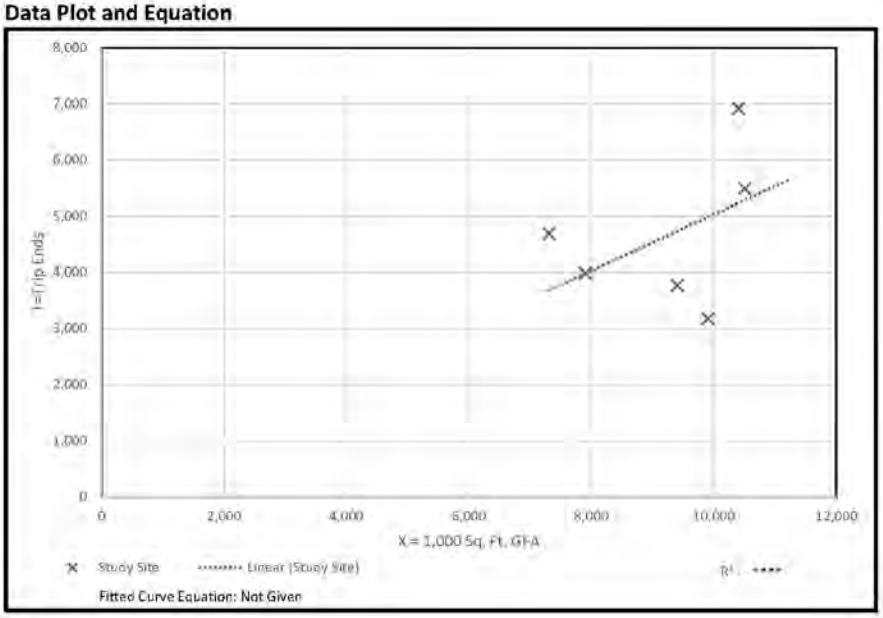


FIGURE 7: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER GFA (AM PEAK)

Love's Travel Stop

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. 1000 Sq.Ft. GFA:	9.2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
25.63	16.87 - 36.79	1.34

Data Plot and Equation

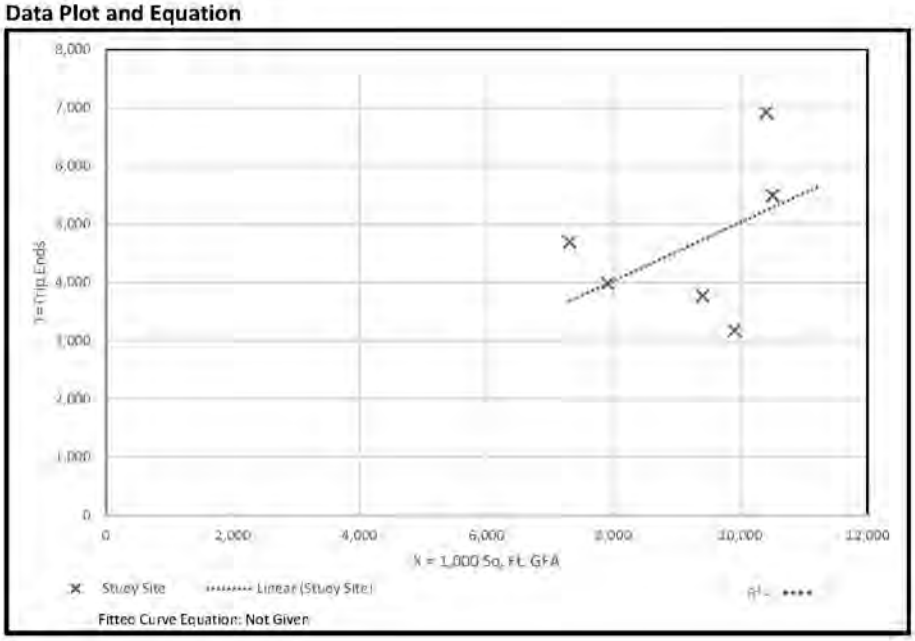


FIGURE 8: LOVE'S TRAVEL STOPS TRIP GENERATION RATES PER GFA (PM PEAK)

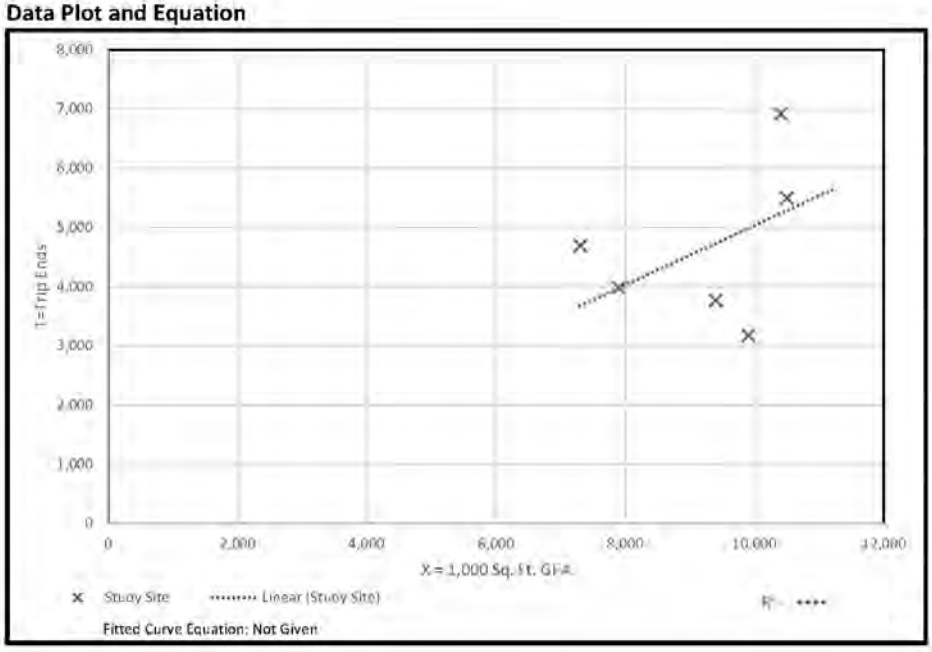
Love's Travel Stop

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	6
Avg. 1000 Sq.Ft. GFA:	9.2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
28.98	17.99 - 37.79	1.34

Data Plot and Equation



Conclusions & Recommendations

As a result of this Technical Paper, it is recommended that the data provided in this report be used solely for development of modern travel stops of this nature as described in the Introduction. Or this data could be used in combination with a more compatible land use, i.e., ITE Land Use Code 950 (Truck Stop), to encompass a larger data set. However, detailed information pertaining to trip generation rates and data collected for LUC 950 would need to be further examined in order to correspond to data collected in this Technical Paper.

Moreover, trips of this nature (modern travel stops) should be recognized as containing an extremely high percentage (88% in this case) of pass-by and/or diverted-link trips. These pass-by and/or diverted-link trips play a substantial role in calculating VMT, particularly in California. These pass-by and/or diverted-link trips are already on the roadway system and need to be accounted for as such when calculating VMT. A sample equation for development of how diverted link trip distance is measured using the following formula per one direction (on and off)[2]:

[PER DIRCTION (N, S, E, W)]

$VMT_{DL} = VMT_{GDL} - VMT_{NDL}$

Where:

VMT_{DL} = Diverted Link VMT
VMT_{GDL} = Gross Diverted Link VMT
VMT_{NDL} = Net Diverted Link VMT

And:

$VMT_{GDL} = [(ADT_T * L_{PBOFF} + ADT_C * L_{PBOFF}) + (ADT_T * L_{PBON} + ADT_C * L_{PBON})]$;

L_{PBOFF} = Pass-by Off-Ramp Length to Driveway (Mi.)
L_{PBON} = Pass-by On-Ramp Length from Driveway to On-Ramp Merging Point (Mi.)
ADT_T = Truck Average Daily Traffic
ADT_C = Car Average Daily Traffic

And:

$VMT_{NDL} = VMT_{GDL} – (ADT_T * L_{PB} + ADT_C * L_{PB})$;

L_{PB} = Distance between Off-Ramp Exit to On-Ramp Merging Point (Mi.)

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[2] Diverted Link Trip Lengths Figures for the Love's Travel Stops and Country Stores study sites is included as an Attachment. Figures provided by Lane Engineers, Inc.

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Following calculation of diverted-link trips (88%) as identified above for two directions of travel, the remaining 12% of primary trips would need to be calculated following local [or state] VMT guidelines and standards. For example, the California Emissions Estimator Model (CalEEMod) estimates the average trip length of convenience market (24-hours) is 2.1 miles and the average trip length of a gasoline/service station is 1.6 miles. To estimate overall VMT, these two components would need to be combined to identify projected VMT.

It should be noted that the VMT calculation for cars and trucks only assumes a single trip to/from the Love's Travel Stops and Country Stores; additional trips to adjacent land uses near the ramp terminus for other purposes is not identified in this formula.

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Attachments

- Vehicle and Truck Trip Survey (Questionnaire)
- Vehicle and Truck Trip Survey Summary Results by Location
- Driveway Counts (Metro Traffic Data, Inc.)
- Diverted Link Trip Lengths (Lane Engineers, Inc.)

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Vehicle and Truck Trip Survey (Questionnaire)

Vehicle and Truck Trip Survey

SURVEY TO BE COMPLETED BY SURVEYOR

For Surveyor Use Only
Date:
Time:
Location:

QUESTIONS

1 **Where did you begin your trip? (City or Town)** _____

2 **Where will you end your trip? (City or Town)** _____

3 **Are you a trucker or an auto customer?**

a) Trucker
b) Auto Customer

4 **Is this your only stop on your trip today? (Yes or No)**

a) Yes
b) No

5 **Did you exit the freeway to get to Love's Travel Stop? (Circle One)**

a) Yes
b) No

6 **What are the PRIMARY and SECONDARY purpose(s) for stopping at Love's Travel Stop? (Two Part Question)**

PRIMARY	SECONDARY (Circle All That Apply)	
☐	*a) Gasoline or Diesel*	
☐	*b) Covenience Store*	
☐	*c) Restaurant*	
☐	*d) Restroom*	
☐	*e) Tire Care Center (Truckers Only)*	
☐	*f) Other (Please Specify)*	_____

Surveyor: Indicate PRIMARY reason for stop by checking box ☒

7 **If you did not stop here, would you have stopped at another nearby location on your trip for purposes indentified in Questions #6? (Circle One)**

a) Yes
b) No
c) Unsure

8 **What do you like best about Love's Travel Stop? (Circle One)**

a) Fuel Prices
b) Food
c) Ease of Access
d) Variety of Services/Convenience
e) My Love Rewards
f) Other (Please Specify) _____

Vehicle and Truck Trip Survey Summary Results by Location

Vehicle and Truck Trip Survey

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			Overall		Barstow		Coachella		Lodi		Lost Hills		Santa Nella		Tulare		Comments
3	**Are you a trucker or an auto customer?**		#	%	#	%	#	%	#	%	#	%	#	%	#	%	
		a) Trucker	337	51.1%	61	53.5%	41	40.6%	54	51.9%	58	54.2%	68	64.8%	55	42.6%	
		b) Auto Customer	323	48.9%	53	46.5%	60	59.4%	50	48.1%	49	45.8%	37	35.2%	74	57.4%	
		TOT	660		114		101		104		107		105		129		
4	**Is this your only stop on your trip today? (Yes or No)**		#	%	#	%	#	%	#	%	#	%	#	%	#	%	
		a) Yes	166	25.2%	38	33.3%	44	43.6%	17	16.3%	2	1.9%	11	10.5%	54	41.9%	
		b) No	494	74.8%	76	66.7%	57	56.4%	87	83.7%	105	98.1%	94	89.5%	75	58.1%	
		TOT	660		114		101		104		107		105		129		
5	**Did you exit the freeway to get to Love's Travel Stop? (Circle One)**		#	%	#	%	#	%	#	%	#	%	#	%	#	%	
		a) Yes	578	87.6%	99	86.8%	88	87.1%	93	89.4%	101	94.4%	96	91.4%	101	78.3%	
		b) No	82	12.4%	15	13.2%	13	12.9%	11	10.6%	6	5.6%	9	8.6%	28	21.7%	
		TOT	660		114		101		104		107		105		129		
6	**What are the PRIMARY and SECONDARY purpose(s) for stopping at Love's Travel Stop?**		#	%	#	%	#	%	#	%	#	%	#	%	#	%	
	PRIMARY	**a) Gasoline or Diesel**	376	57.0%	74	64.9%	68	67.3%	54	51.9%	65	60.7%	56	53.3%	59	45.7%	
		b) Covenience Store	85	12.9%	10	8.8%	11	10.9%	17	16.3%	13	12.1%	12	11.4%	22	17.1%	
		c) Restaurant	61	9.2%	9	7.9%	12	11.9%	5	4.8%	7	6.5%	4	3.8%	24	18.6%	
		d) Restroom	50	7.6%	0	0.0%	6	5.9%	15	14.4%	7	6.5%	12	11.4%	10	7.8%	
		e) Tire Care Center/Scale	10	1.5%	2	1.8%	1	1.0%	3	2.9%	0	0.0%	2	1.9%	2	1.6%	
		f) Other (Please Specify)	78	11.8%	19	16.7%	3	3.0%	10	9.6%	15	14.0%	19	18.1%	12	9.3%	
		TOT	660		114		101		104		107		105		129		Break, shower, sleep, rest, oil, battery, Transflow, load check
7	**If you did not stop here, would you have stopped at another nearby location on your trip for purposes idenified in Question #6:**		#	%	#	%	#	%	#	%	#	%	#	%	#	%	
		a) Yes	394	60.1%	66	57.9%	62	61.4%	52	50.0%	79	73.8%	68	64.8%	67	51.9%	Nearby location mave have been misunderstood
		b) No	256	39.0%	48	42.1%	39	38.6%	51	49.0%	24	22.4%	36	34.3%	58	45.0%	
		c) Unsure	6	0.9%	0	0.0%	0	0.0%	1	1.0%	4	3.7%	1	1.0%	4	3.1%	
		TOT	656		114		101		104		107		105		129		
8	**What do you like best about Love's Travel Stop?**		#	%	#	%	#	%	#	%	#	%	#	%	#	%	
		a) Fuel Prices	82	12.9%	14	12.3%	18	17.8%	15	14.4%	9	8.6%	9	8.6%	17	15.9%	
		b) Food	33	5.2%	10	8.8%	5	5.0%	4	3.8%	3	2.9%	3	2.9%	8	7.5%	
		c) Ease of Access	74	11.6%	15	13.2%	12	11.9%	10	9.6%	14	13.3%	14	13.3%	9	8.4%	
		d) Variety of Services/Convenience	125	19.7%	16	14.0%	23	22.8%	20	19.2%	21	20.0%	21	20.0%	24	22.4%	
		e) My Love's Rewards	99	15.6%	18	15.8%	10	9.9%	13	12.5%	18	17.1%	18	17.1%	22	20.6%	
		f) Other (Please Specify)	223	35.1%	41	36.0%	33	32.7%	42	40.4%	40	38.1%	40	38.1%	27	25.2%	Friendly, clean, showers, hours, everything, sweet tea, fast, staff, the girls (Barstow), tire pass, hospitality, coffee, the name, atmoshpere, rewards
		TOT	636		114		101		104		105		105		107		

RUETTGERS & SCHULER
CIVIL ENGINEERS

1800 30th Street, Suite 260
Bakersfield, California 93301
Phone (661) 327-1969
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Memo

To: Aaron Oliver, Lane Engineers, Inc.

From: Ian Parks, Ruettgers & Schuler Civil Engineers

Date: March 3, 2020

Re: Response to Comments from the Caltrans Comment Letter – SR 119 & S. H St

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Dear Mr. Oliver,

Pursuant to your request we have reviewed the above referenced comments and offer the following responses. The numbered items in this memo correspond to the bullet items and attached noted comment letter received from Caltrans dated February 28, 2020.

1. The "Trip Generation and Travel Characteristic Study" used to estimate traffic volumes and directed link and pass-by trips is included in the appendix.

2. The requested electronic Synchro files for all scenarios are included as an attachment to this memorandum.

3. The diverted link trips were applied to off-ramps and accounted for in the project trip distribution table, analysis, and figures. Therefore, no revisions are necessary.

4. The growth rates stated on page 7 of the report were revised 0.15% to 3.13%. Traffic count information was included in the Appendix for all intersections counted.

5. The attached Regional Transportation Impact Fee (RTIF) facilities list shows covered mitigation measures for SR 119 & SR 99 interchange on page 5. Global Project Numbers B410 and B345 have a fee funding of $1,145,244 and $7,334,988, respectively.

6. The roadway segment from SR 99 SB off-ramp to S. H Street is currently operating below a LOS C. As part of the mitigation, it was recommended to widen the roadway/bridge to four lanes minimum. As stated in response number 5 above, the cost of the improvement is included in the RTIF program.

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
BAKERSFIELD RTIF FACILITY LIST (NON-CORE)*																	
B303	7th Standard Road	Airport Drive								Traffic Signals	Install Signal	$0	$0	$161,400		$161,400	$161,400
B595	7th Standard Road	Chester Avenue								Modified Traffic Signals	Signal Modification	$0	$0	$58,400		$58,400	$58,400
B307	7th Standard Road	McCray Street								Traffic Signals	Install Signal	$0	$0	$148,400		$148,400	$148,400
E125	7th Standard Road	Greeley Road	Santa Fe Way	1.50		2	4	2	3.0	2 Lane Additions	Add 2 lanes		$1,561,696			$1,561,696	$1,561,696
E267	7th Standard Road	SR 43/Enos Lane		1.00		2	6	4	4.0	Expand Intersection	Expand Intersection		$1,267,200			$1,267,200	$1,267,200
B311	7th Standard Road	SR 99	I-5	3.00						Freeway Projects	Advance Planning	$0	$0		$5,500,000	$5,500,000	$5,500,000
B309	7th Standard Road	SR 99								State Hwy Bridges, Interchanges	Replace EB Bridge: add WB-SB ramp	$0	$0		$7,000,000	$7,000,000	$7,000,000
E159	7th Standard Road	Wings Way	Airport Drive	0.50		2	4	2	1.0	2 Lane Additions	Add 2 Lanes		$520,565			$520,565	$520,565
E340	7th Standard Road	Quail Creek Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E336	7th Standard Road	Zachary Road	Coffee Road							2 Lane Additions	Add 2 Lanes, 4 to 6 Lane widening		$0		$3,437,500	$3,437,500	$3,437,500
E337	7th Standard Road	UPRR/SR 99								Railroad Grade Separations	Grade Separation		$0		$27,021,000	$27,021,000	10,361,000
E338	7th Standard Road	Santa Fe Way	Coffee Road							2 Lane Additions	Add 2 lanes, 4 Lane Widening		$0		$45,154,000	$45,154,000	1,203,500
E160	Airport Drive	Norris Road	Olive Drive	2.00		4	6	2	4.0	2 Lane Additions	Add 2 lanes, BORDER		$2,082,262			$2,082,262	$1,041,131
B1	Airport Drive	Norris Road								Expand Intersection	Expand Intersection, BORDER	$687,656	$687,656		$0	1,375,311	$687,656
E185	Airport Drive	Olive Drive			0.50					Expand Intersection	BORDER		$500,000			$500,000	$250,000
B2	Airport Drive	Olive Drive n/o	State Road	0.60		4	6	2	1.2	2 Lane Additions	Add 2 lanes/Expand Intersection, BORDER	$0	$5,000,000		$0	5,000,000	$2,500,000
B3	Airport Drive	UP RR								Railroad Grade Separations	Widen RR Bridge, BORDER	$0	$0		$1,222,498	$1,222,498	$611,249
B450	Akers Road	Pacheco Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E302	Alfred Harrell Highway	China Grade Loop	Fairfax Road	0.50		4	6	2	1.0	2 Lane Additions	Add 2 Lanes	$0	$520,565		$0	$520,565	$520,565
B577	Alfred Harrell Highway	Lake Ming Road								Traffic Signals	Install traffic signal	$0	$0	$190,000	$0	$190,000	$190,000
B540	Alfred Harrell Highway	West End Hart Park	SR 178	5.50		2	4	2	11.0	2 Lane Additions	Add 2 lanes	$0	$5,726,220		$611,249	$6,337,469	$6,337,469
B158	Allen Road	Ming Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E4	Allen Road	Panama Lane	SR 119/Taft Highway	2.00		0	2	2	4.0	2 Lane Additions	Construct 2 lanes		$2,082,262			$2,082,262	$2,082,262
E344	Allen Road	SR 58/Rosedale Highway	Brimhall Road	1.00	0.75	4	6	1	0.3	1 Lane Additions	Add 1 lanes		$130,141			$130,141	$130,141
E186	Allen Road	SR 58/Rosedale Highway								Expand Intersection	Widen to 6 lanes		$500,000			$500,000	$500,000
B4	Allen Road	Brimhall Road	Stockdale Highway	1.00	0.75	2	6	2	0.5	2 Lane Additions	Add 2 lanes	$0	$260,283		$0	$260,283	$260,283
B5	Allen Road	Campus Park								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B6	Allen Road	Chamber Boulevard								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B8	Allen Road	Goose Lake Slough								Canal Culverts	Construct new Culvert @ Sta. 236+60 (Goose Lake)	$0	$220,050		$0	$220,050	$220,050
B9	Allen Road	Harris Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B11	Allen Road	Kern River Canal								Canal Bridges	Construct canal bridge at Sta. 150+00 (River Canal)	$0	$0		$611,249	$611,249	$611,249
B13	Allen Road	Meacham Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B15	Allen Road	Noriega Road	Hageman Road	0.38		2	2	1	0.4	1 Lane Additions	NB only	$36,122	$121,723		$611,249	$769,094	$769,094
B16	Allen Road	Noriega Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B18	Allen Road	Panama Lane	Ming Avenue	3.00		0	2	2	6.0	2 Lane Additions	Construct 2 lanes	$0	$3,123,393		$0	$3,123,393	$3,123,393
B19	Allen Road	Reina Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B20	Allen Road	Snow Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B21	Allen Road	UP RR								Improve Railroad Grade Crossings	Improve grade crossing	$0	$1,000,000		$0	$1,000,000	$1,000,000
E342	Allen Road	N/o Rosedale Hwy								Relocate Obstruction	PG&E Tower Relocation, 2 Towers 1165ft North of Rosedale	$0	$0		$200,000	$200,000	$200,000
E341	Allen Road	N/o Rosedale Hwy	Meacham Road + .36miles	0.60		2	4	1	0.6	1 Lane Additions	Road widening	$0	$312,339		$0	$312,339	$312,339
B574	Ashe Road	Harris Road								Traffic Signals	Install traffic signal	$0	$0	$190,000	$0	$190,000	$190,000
B541	Ashe Road	Panama Lane	Taft Highway	2.00		2	6	2	4.0	2 Lane Additions	Add 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
E6	Ashe Road	SR 119/Taft Highway	Curnow Road	0.50		2	4	2	1.0	2 Lane Additions	Construct 2 lanes		$520,565			$520,565	$520,565
B24	Ashe Road	Berkshire Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B25	Ashe Road	Hosking Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B26	Ashe Road	McKee Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B454	Berkshire Road	Akers Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B455	Berkshire Road	Buena Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B456	Berkshire Road	Mountain Ridge Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B457	Berkshire Road	Mountain Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B458	Berkshire Road	Reliance Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B29	Berkshire Road	South H Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B30	Berkshire Road	South Union Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B615	Berkshire Road (Star Lake Pkwy)	Sunset Spur								Improve Railroad Grade Crossings	New at-grade crossing	$0	$800,000		$0	$800,000	$800,000
B32	Breckenridge Road	SR 184/Morning Drive	Vineland Road	1.00		2	4	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B37	Brimhall Road	Jenkins Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B41	Brimhall Road	Renfro Road	Allen Road	0.50	0.25	2	4	2	0.5	2 Lane Additions	Add 2 lanes (excluding Westdale Avenue to Jenkins Road KEN664)	$0	$260,283		$0	$260,283	$260,283
E172	Brimhall Road	Rudd Road	Renfro Road	0.50		0	2	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565			$520,565	$520,565
B43	Brimhall Road	Verdugo Lane								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B613	Buena Vista Road	Campus Park Drive								Relocate Obstruction	Relocate PG&E Tower	$0	$0		$273,456	$273,456	$273,456
B48	Buena Vista Road	Campus Park Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B49	Buena Vista Road	Harris Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B51	Buena Vista Road	Pacheco Road	Panama Lane	1.00	0.70	2	4	2	0.6	2 Lane Additions	Construct 2 Lanes	$0	$312,339		$0	$312,339	$312,339
B614	Buena Vista Road	Pacheco Road	White Lane	1.00				1	1.0	1 Lane Additions	Add one lane	$0	$520,565		$0	$520,565	$520,565
B542	Buena Vista Road	Panama Lane	SR 119/Taft Highway	2.00		2	4	2	4.0	2 Lane Additions	Construct 2 Lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
B53	Buena Vista Road	SJ RR								Improve Railroad Grade Crossings	Improve grade crossing at Sta. 52+80	$0	$0		$122,250	$122,250	$122,250
B61	Calloway Drive	7th Standard Road	Snow Road	1.00		2	4	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
E227	Calloway Drive	Etchard Road 100' s/o								Canal Bridges	Widen Canal Crossing		$300,000			$300,000	$300,000
B60	Calloway Drive	Norris Road	Lake Superior Drive	0.20		3	6	1	0.2	1 Lane Additions	Add 1 lanes	$20,000	$104,113		$0	$124,113	$124,113
B62	Calloway Drive	SR 58/Rosedale Highway	Holland Street	0.25		4	6	2	0.5	2 Lane Additions	Widen roadway and intersection	$0	$0		$5,586,000	$5,586,000	$5,586,000
B64.1	Casa Loma Drive	Washington Street	Fairfax Road	2.50		0	2	2	5.0	2 Lane Additions	Construct 2 lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
E249	Centennial Corridor (TRIP)	Westside Parkway Terminus	SR 99/SR 58							Freeway Projects	Construct Freeway - TRIP, REGIONAL		$0		$644,586,000	$644,586,000	$123,187,000
B461	Chamber Boulevard	Windermere Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E170	Chase Avenue	Masterson Street	Comanche Drive	1.00		0	4	2	2.0	2 Lane Additions	Construct 2 lanes		$640,647			$640,647	$640,647
B71	China Grade Loop	Manor Street	Round Mountain Road	2.40		2	4	2	4.8	2 Lane Additions	Add 2 lanes	$497,908	$2,498,714		$0	$2,996,622	$2,996,622
E307	China Grade Loop	Round Mountain Road	Alfred Harrell Hwy	1.10		2	4	4	4.4	2 Lane Additions	Add 2 lanes	$0	$2,290,488		$20,000,000	$22,290,488	$22,290,488
B72	China Grade Loop	Round Mountain Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B75	Coffee Road	7th Standard Road	Norris Road	1.50		2	6	2	3.0	2 Lane Additions	Add 2 lanes	$61,125	$1,561,696		$0	$1,622,821	$1,622,821
E209	Coffee Road	7th Standard Road 320' s/o								Canal Bridges	from 2 to 6 lanes, Widen Canal Crossing		$600,000			$600,000	$600,000
E339	Coffee Road	Rosedale Highway								Expand Intersection	Expand Intersection		$0		$9,000,000	$9,000,000	$9,000,000

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
E342	Coffee Road	Truxtun Ave								Expand Intersection	Expand Intersection		$0		$3,000,000	$3,000,000	$3,000,000
E343	Coffee Road	Stockdale Highway								Expand Intersection	Expand Intersection		$0		$3,200,000	$3,200,000	$3,200,000
B571	Coffee Road	Norris Road								Relocate Obstruction	Relocate PG&E transmission tower	$0	$0		$273,457	$273,457	$273,457
E16	Comanche Drive	Alfred Harrell Highway	SR 58	6.00		2	4	2	12.0	2 Lane Additions	Add 2 lanes		$6,246,786			$6,246,786	$6,246,786
E189	Comanche Drive	SR 58								State Hwy Bridges, Interchanges	Widen overpass		$5,000,000			$5,000,000	$5,000,000
E304	Comanche Drive	SR 58								Traffic Signals	Install Signal, State	$0	$0	$250,000	$250,000	$500,000	$500,000
E17	Comanche Drive	UPRR								Railroad Grade Separations	Grade Separation		$0		$20,000,000	$20,000,000	$15,000,000
E217	Cottonwood Road	Hosking Avenue 1700' s/o								Canal Bridges	pictures, Widen Canal Crossing		$300,000			$300,000	$300,000
E218	Cottonwood Road	Hosking Avenue 3200' s/o								Canal Bridges	Widen Canal Crossing		$300,000			$300,000	$300,000
E216	Cottonwood Road	Panama Lane 1500' s/o								Canal Bridges	Widen Canal Crossing		$300,000			$300,000	$300,000
E163.1	Cottonwood Road	SR 58	Panama Lane	4.00		2	4	2	8.0	2 Lane Additions	Add 2 lanes		$2,133,516			$2,133,516	$2,133,516
B80	Day Avenue	Airport Drive								Traffic Signals	Install Signal	$0	$0	$155,100		$155,100	$155,100
B81	Day Avenue	Chester Avenue								Traffic Signals	Install Signal	$0	$0	$147,800		$147,800	$147,800
B82	Day Avenue	Manor Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B83	Day Avenue	McCray Street								Traffic Signals	Install Signal	$0	$0	$143,200		$143,200	$143,200
B85	Edison Road	Breckenridge Road	Edison Highway	1.25		0	4	2	2.5	2 Lane Additions	Construct 2 lanes	$0	$1,301,414		$0	$1,301,414	$1,301,414
B86	Edison Road	SR 178	Breckenridge Road	2.50		0	4	2	5.0	2 Lane Additions	Construct 2 lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
B148	El Toro Viejo Road	BNSF RR								Railroad Grade Separations	Grade Separation	$0	$0		$10,000,000	$10,000,000	$10,000,000
B464	Etchart Road	Calloway Drive	Borel Street	0.50		2	4	1	0.5	1 Lane Additions	Add 1 eastbound lane & move ditch	$0	$160,162		$177,507	$337,668	$337,668
B465	Etchart Road	Calloway Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B468	Etchart Road	Jenkins Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B466	Etchart Road	Old Farm Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B87	Fairfax Road	Alfred Harrell Highway	Paladino Drive	1.00		2	6	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
E203	Fairfax Road	Alfred Harrell Highway								State Hwy Bridges, Interchanges	Expand Underpass, Widen Intersection		$5,000,000			$5,000,000	$5,000,000
B92	Fairfax Road	Highland Knolls Drive s/o	Niles Street	0.26		4	6	1	0.3	Construct Medians	Westside and Median, BORDER	$20,139	$135,347		$0	$155,486	$77,743
E167	Fairfax Road	Redbank Road	Panama Lane	3.00		2	4	2	6.0	2 Lane Additions	Construct 2 lanes		$3,123,393			$3,123,393	$3,123,393
B90	Fairfax Road	Redbank Road	SR 58	0.75		2	4	2	1.5	2 Lane Additions	Add 2 lanes	$0	$780,848		$0	$780,848	$780,848
B91	Fairfax Road	Redbank Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B95	Fairfax Road	SR 58								State Hwy Bridges, Interchanges	Widen SR 58 bridge at Sta. 45+75, REGIONAL	$0	$0		$1,222,498	$1,222,498	$1,068,463
B96	Fairfax Road	SR 58 Off Ramps								Traffic Signals	Install Signals (2nd signal cost in Additional costs), State, REGIONAL		$0	$250,000	$250,000	$500,000	$437,000
B97	Fairview Road	Monitor Street	South Union Avenue	0.50		2	4	2	1.0	2 Lane Additions	Add 2 lanes	$13,797	$320,323		$0	$334,121	$334,121
B99	Fruitvale Avenue	Downing Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B100	Fruitvale Avenue	Hageman Road	SR 58/Rosedale Highway	1.25		2	6	2	2.5	2 Lane Additions	Add 2 lanes	$1,008,561	$1,301,414		$0	$2,309,975	$2,309,975
E206	Fruitvale Avenue	Hageman Road								Expand Intersection	S.E. Corner		$500,000			$500,000	$500,000
B101	Fruitvale Avenue	Meany Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B102	Fruitvale Avenue	Snow Road	Norris Road	0.50		2	4	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565		$0	$520,565	$520,565
B98	Fruitvale Avenue	Snow Road 600' s/o								Canal Culverts	Widen Culvert @ Beardsley Canal	$0	$0		$250,000	$250,000	$250,000
E207	Fruitvale Avenue	SR 58/Rosedale Highway								Canal Bridges	Widen canal 20' n/o Rosedale Highway, Widen Canal Crossing		$300,000			$300,000	$300,000
E300	Gilmore Avenue	Calloway Canal								Canal Bridges	Construct Calloway Canal Bridge	$0	$0		$611,249	$611,249	$611,249
E164	Gilmore Avenue	Fruitvale Avenue	Landco Drive	0.86		0	2	2	1.7	2 Lane Additions	Construct 2 lanes		$550,956		$1,000,000	$1,550,956	$1,550,956
B489	Gilmore Avenue	Landco Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E301	Gilmore Avenue	RR								Railroad Grade Separations	New at grade crossing	$0	$0		$500,000	$500,000	$500,000
B103	Gosford Road	Berkshire Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B105	Gosford Road	Hosking Avenue/McCutchen Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E210	Gosford Road	McCutchen Road 1500' n/o		4.00		2	4			Canal Bridges	Widen Canal Crossing		$400,000			$400,000	$400,000
B106	Gosford Road	McKee Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B543	Gosford Road	Panama Lane	SR 119/Taft Highway	2.00		2	6	2	4.0	2 Lane Additions	Add 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
B107	Hageman Road	Allen Road		0.25		2	6	4	1.0	Expand Intersection	Install Signal, Expand Intersection	$0	$520,565	$190,000	$0	$710,565	$710,565
E38	Hageman Road	Heath Road	Rudd Road	0.50		2	3	2	1.0	2 Lane Additions	Construct 2 additional lanes		$520,565			$520,565	$520,565
E45	Hageman Road	Heath Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B109	Hageman Road	Jenkins Road	Allen Road	0.53	0.20	2	6	4	1.3	2 Lane Additions	partial - only along non-residential frontage	$16,987	$680,900		$305,625	$1,003,511	$1,003,511
B110	Hageman Road	Jenkins Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B111	Hageman Road	Jewetta Avenue	Verdugo Lane	0.20		2	6	4	0.8	1 Lane Additions	only additional RW and improvements	$43,735	$416,452		$305,625	$765,812	$765,812
B112	Hageman Road	Jewetta Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B473	Hageman Road	Landco Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B114	Hageman Road	Mohawk Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E40	Hageman Road	Nord Road	Wegis Avenue	0.50		2	4	2	1.0	2 Lane Additions	Construct 2 additional lanes		$520,565			$520,565	$520,565
B115	Hageman Road	Old Farm Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B117	Hageman Road	Renfro Road	Jenkins Road	0.50		2	4	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565		$0	$520,565	$520,565
B118	Hageman Road	Renfro Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B119	Hageman Road	Santa Fe Way	Old Farm Road	0.50		2	6	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565		$0	$520,565	$520,565
B581	Hageman Road	Santa Fe Way								Railroad Grade Separations	Grade Separation	$0	$0		$37,600,000	$37,600,000	6,000,000
E39	Hageman Road	Wegis Avenue	Heath Road	0.50		2	4	2	1.0	2 Lane Additions	Construct 2 additional lanes		$520,565			$520,565	$520,565
E46	Hageman Road	Wegis Avenue								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E335	Hageman Road	Knudsen Road	SR 204/Golden State Highway							State Hwy Bridges, Interchanges	Hageman flyover		$0		$68,894,000	$68,894,000	65,512,000
B125	Heath Road	Brimhall Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E53	Heath Road	Hageman Road	SR 58/Rosedale Highway	1.00		2	4	2	2.0	2 Lane Additions	Construct 2 additional lanes (recontruct existing)		$1,041,131			$1,041,131	$1,041,131
E57	Heath Road	Johnson Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E59	Heath Road	Kratzmeyer Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B477	Heath Road	Palm Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B126	Heath Road	SR 58/Rosedale Highway	Stockdale Highway	2.50	1.50	2	4	2	2.0	2 Lane Additions	Construct 2 Lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B127	Heath Road	Stockdale Highway								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B550	Highland Knolls Drive	Monica Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B479	Highland Knolls Drive	Morning Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B128	Hosking Avenue	Akers Road	Wible Road	0.50	0.40	2	4	2	0.2	2 Lane Additions	Construct 4 lanes	$0	$104,113		$0	$104,113	$104,113
B570	Hosking Avenue	Hughes Lane								Traffic Signals	Install traffic signal	$0	$0	$190,000	$0	$190,000	$190,000
B130	Hosking Avenue	Monitor Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B131	Hosking Avenue	South H Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B133	Hosking Avenue	South Union Avenue	South H Street	0.30		2	4	2	0.6	2 Lane Additions	Add 2 lanes	$0	$312,339		$0	$312,339	$312,339
B335	Hosking Avenue	South Union Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B134	Hosking Avenue	SR 99								State Hwy Bridges, Interchanges	Construct Interchange	$0	$0		$35,000,000	$35,000,000	$35,000,000

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
B135	Hosking Avenue	Stine Road	Akers Road	0.50	0.25	0	4	2	0.5	2 Lane Additions	Construct 2 lanes	$0	$260,283		$0	$260,283	$260,283
B136	Hosking Avenue	Wible Road	South H Street	0.80	0.10	2	6	4	2.8	4 Lane Additions	Add 4 lanes	$0	$1,457,583		$0	$1,457,583	$1,457,583
B437	Hosking Avenue	Wible Road								Traffic Signals	Install SIgnal	$0	$0	$190,000	$0	$190,000	$190,000
B480	Hosking Avenue/McCutchen Road	Akers Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E72	Hosking Avenue/McCutchen Road	Allen Road	Buena Vista Road	1.00		0	2	2	2.0	2 Lane Additions	Construct 2 lanes		$1,041,131			$1,041,131	$1,041,131
E73	Hosking Avenue/McCutchen Road	Allen Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B484	Hosking Avenue/McCutchen Road	Buena Vista Road	Gosford Road	2.00		2	4	2	4.0	2 Lane Additions	Add 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
B481	Hosking Avenue/McCutchen Road	Buena Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B482	Hosking Avenue/McCutchen Road	Gosford Road	Stine Road	2.00		0	4	2	4.0	2 Lane Additions	Construct 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
B129	Hosking Avenue/McCutchen Road	Mountain Ridge Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B483	Hosking Avenue/McCutchen Road	Mountain Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B154	Hosking Avenue/McCutchen Road	Progress Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B616	Hosking Avenue/McCutchen Road	Sunset Spur								Improve Railroad Grade Crossings	New at-grade crossing	$0	$1,000,000		$0	$1,000,000	$1,000,000
E215	Jewetta Avenue	Hageman Road								Expand Intersection	Expand Intersection	$100,000	$500,000			$600,000	$350,000
B141	Jewetta Avenue	Meacham Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B142	Jewetta Avenue	Noriega Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B143	Jewetta Avenue	Reina Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B144	Jewetta Avenue	Hageman Road	Meacham Road	0.50	0.30	3	4	1	0.2	1 Lane Additions	Add 1 lanes	$0	$104,113		$0	$104,113	$104,113
B145	Jewetta Avenue	Snow Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E61	Kratzmeyer Road	Nord Road	Santa Fe Way	1.50		2	4	2	3.0	2 Lane Additions	Construct 2 additional lanes (recontruct existing)		$1,561,696			$1,561,696	$1,561,696
E65	Kratzmeyer Road	Nord Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B295	Kratzmeyer Road	Olive Drive/Santa Fe Way								Railroad Grade Separations	Railroad Grade Separation	$0	$0		$20,000,000	$20,000,000	15,000,000
E268	Kratzmeyer Road	SR 43/Enos Lane		0.75		2	6	4	3.0	Expand Intersection	Expand Intersection		$1,561,696			$1,561,696	$1,561,696
E69	Kratzmeyer Road	SR 43/Enos Lane								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E64	Kratzmeyer Road	Wegis Avenue								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E345	Knudsen Drive	Olive Drive	Hageman Road	0.75		4	6	2	1.5	2 Lane Additions	Construct 2 Lanes	$385,784	$480,485		$0	$866,269	$866,269
B151	Masterson Street	Paladino Drive	Alfred Harrell Highway	1.20		0	4	4	4.8	4 Lane Additions	Construct 4 lanes	$0	$2,498,714		$0	$2,498,714	$2,498,714
B518	Masterson Street	Panorama Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B152	Masterson Street	SR 178	Alfred Harrell Highway							Canal Bridges	4 box culverts & 2 bridges	$0	$3,227,273		$0	$3,227,273	$3,227,273
B153	Masterson Street	SR 178	Paladino Drive	0.95		2	4	2	1.9	2 Lane Additions	Add 2 lanes	$328,148	$989,074		$0	$1,317,223	$1,317,223
E71	Masterson Street/Edison Road	UPRR								Railroad Grade Separations	Grade Separation		$20,000,000			$20,000,000	15,000,000
B490	McKee Road	Akers Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B492	McKee Road	Buena Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B493	McKee Road	Mountain Ridge Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B494	McKee Road	Mountain Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B155	McKee Road	South H Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B156	McKee Road	South Union Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B157	McKee Road	SR 99								State Hwy Bridges, Interchanges	Construct Overpass	$0	$11,000,000		$0	$11,000,000	$11,000,000
B617	McKee Road	Sunset Spur								Improve Railroad Grade Crossings	New at-grade crossing	$0	$800,000		$0	$800,000	$800,000
B440	McKee Road	Wible Road								Traffic Signals	Install SIgnal	$0	$0	$190,000	$0	$190,000	$190,000
B496	Meacham Road	Allen Road	Jenkins Road	0.50		2	4	1	0.5	2 Lane Additions	Construct 2 lanes	$0	$160,162		$0	$160,162	$160,162
B140	Meacham Road	Jenkins Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B498	Meacham Road	Renfro Road	Jenkins Road	0.50		2	4	1	0.5	2 Lane Additions	Construct 2 lanes	$0	$160,162		$122,250	$282,412	$282,412
B161	Ming Avenue	West Beltway	Allen Road	1.50	0.00	4	5	4	6.0	4 Lane Additions	Construct 4 lanes - north half 2 Lanes adjacent to Berrenda Mesa	$0	$3,123,393		$0	$3,123,393	$3,123,393
B164	Mohawk Avenue	Calloway Canal								Canal Bridges	Construct Calloway Canal Bridge	$0	$0		$1,000,000	$1,000,000	$1,000,000
B166	Mohawk Avenue	Hageman Road	SR 58/Rosedale Highway	1.25		0	6	4	5.0	4 Lane Additions	Construct 4 Lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
B172	Morning Drive	Alfred Harrell Highway	Paladino Drive	1.80		0	6	2	3.6	2 Lane Additions	Construct 2 lanes	$0	$1,874,036		$0	$1,874,036	$1,874,036
B173	Morning Drive	Alfred Harrell Highway	Paladino Drive							Canal Bridges	Construct 3 Culverts/Bridges	$0	$0		$4,034,244	$4,034,244	$4,034,244
B175	Morning Drive	Auburn Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B463	Morning Drive	College Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B176	Morning Drive	Paladino Drive	SR 178	1.00		2	6	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
E346	SR 184	Edison Highway	SR 58	0.50		4	6	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565		$0	$520,565	$520,565
B274	Morning Drive	Panorama Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B177	Morning Drive	SR 178	College Avenue	0.90		0	6	4	3.6	4 Lane Additions	Construct 4 lanes	$0	$1,874,036		$0	$1,874,036	$1,874,036
B501	Morningside Drive	Juniper Ridge Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B502	Morningside Drive	Masterson Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B503	Morningside Drive	Morning Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B504	Morningside Drive	Panorama Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B611	Mount Vernon Avenue	Arvin Edison Canal								Canal Bridges	Construct Canal Bridge	$0	$0		$611,249	$611,249	$611,249
B179	Mount Vernon Avenue	Casa Loma Drive	Belle Terrace	0.50		2	4	2	1.0	2 Lane Additions	Construct 2 lanes	$0	$520,565		$0	$520,565	$520,565
B610	Mount Vernon Avenue	White Lane/Muller Road	Panama Lane	1.50		0	6	2	3.0	2 Lane Additions	Add 2 lanes	$0	$1,561,696		$0	$1,561,696	$1,561,696
E83	Nord Avenue	Noriega Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E84	Nord Avenue	Palm Avenue								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E82	Nord Avenue	Reina Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B185	Norris Road	Calloway Drive	Coffee Road	1.00	0.80	2	4	0		R/W Only	Only additional RW and improvements	$5,232	$0		$1,222,498	$1,227,730	$1,227,730
B184	Norris Road	Calloway Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B186	Norris Road	Chester Avenue	Manor Street	0.50		2	4	2	1.0	2 Lane Additions	Add 2 lanes	$100,000	$320,323		$0	$420,323	$420,323
B187	Norris Road	Coffee Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B188	Norris Road	Fruitvale Avenue	Knudsen Drive	0.84		2	4	0		R/W Only	only additional RW and improvements	$92,054	$0		$305,625	$397,679	$397,679
B588	Norris Road	Manor Street								Modified Traffic Signals	Signal Modification	$0	$0	$95,000	$0	$95,000	$95,000
B191	Norris Road	Riverlakes Drive/Quail Creek Road								Traffic Signals	Install Signal (50% Funded)	$0	$0	$190,000	$0	$190,000	$95,000
B192	Norris Road	SR 99	Airport Drive	1.50		2	4	2	3.0	2 Lane Additions	Add 2 lanes	$337,191	$960,970		$0	$1,298,161	$1,298,161
B193	Oak Street	California Avenue	SR 178/24th Street	1.00		4	6	2	2.0	2 Lane Additions	Add 2 lanes, BORDER	$1,290,958	$1,041,131		$0	$2,332,089	$1,166,044
B195	Old Farm Road	Noriega Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B196	Old Farm Road	Reina Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B197	Old River Road	Berkshire Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B198	Old River Road	Campus Park Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B199	Old River Road	Harris Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B200	Old River Road	Hosking Avenue/McCutchen Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B201	Old River Road	McKee Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B203	Old River Road	Pacheco Road	Campus Park Drive	0.50		2	4	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565		$0	$520,565	$520,565

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
B204	Old River Road	Panama Lane	Pacheco Road	1.00		2	4	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B206	Old River Road	SR 119/Taft Highway	Panama Lane	2.00		2	4	2	4.0	2 Lane Additions	Add 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
E316	Old River Road	SR 119/Taft Highway								Canal Culverts	Canal Crossing	$0	$600,000		$0	$600,000	$600,000
E305	Old River Road	SR 119/Taft Highway		0.17						Relocate Canals	Relocate Canal	$0	$225,000		$0	$225,000	$225,000
E264	Old River Road	SR 119/Taft Highway								Canal Bridges	Realign Old River Road and Canal Crossing	$500,000	$3,000,000		$500,000	$4,000,000	$4,000,000
B510	Olive Drive	Old Farm Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B511	Olive Drive	Renfro Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B214	Olive Drive	Rudd Road (West Beltway)	Allen Road	1.50		2	4	2	3.0	2 Lane Additions	Construct 2 Lanes	$0	$1,561,696		$645,479	$2,207,175	$2,207,175
B221	Olive Drive	SR 99	Beardsley Canal	0.80		4	6	2	1.6	State Hwy Bridges, Interchanges	Widen SR 99 Interchange; Widen Beardsley Canal Culvert	$1,613,697	$832,905		$3,602,303	$6,048,905	$6,048,905
B220	Olive Drive	UP RR w/o Roberts Lane								Railroad Grade Separations	Grade Separation	$0	$0		$20,000,000	$20,000,000	15,000,000
E347	Olive Drive	Knudsen Road								Expand Intersection	Expand Intersection	$0	$1,000,000		$0	$1,000,000	$1,000,000
B512	Olive Drive	Verdugo Lane								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B609	Oswell Street	White Lane	Panama Lane	2.00		0	6	2	4.0	2 Lane Additions	Add 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
B235	Paladino Drive	Fairfax Road	Morning Drive	1.25		0	6	4	5.0	4 Lane Additions	Construct 4 lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
B578	Paladino Drive	Fairfax Road	Morning Drive							Relocate Obstruction	Relocate PG&E transmission tower	$0	$0		$273,457	$273,457	$273,457
B236	Paladino Drive	Fairfax Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B237	Paladino Drive	Masterson Street	Alfred Harrell Highway	1.00		0	4	2	2.0	2 Lane Additions	Construct 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B238	Paladino Drive	Masterson Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B239	Paladino Drive	Morning Drive	Masterson Street	1.50		0	4	2	3.0	2 Lane Additions	Construct 2 lanes (Excluding Morning Drive to Cosmo KEN648)	$0	$1,561,696		$0	$1,561,696	$1,561,696
B240	Paladino Drive	Morning Drive	Masterson Street							Canal Culverts	Construct 5 Culverts	$0	$0		$124,695	$124,695	$124,695
B241	Paladino Drive	Morning Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B242	Palm Avenue	Heath Road	Renfro Road	0.25		2	4	2	0.5	2 Lane Additions	Only at undeveloped SR area	$0	$160,162		$0	$160,162	$160,162
E165	Panama Lane	Cottonwood Road	SR 184/Weedpatch Highway	4.00		2	4	2	8.0	2 Lane Additions	Construct 2 additional lanes		$4,164,524			$4,164,524	$4,164,524
E89	Panama Lane	Heath Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B516	Panama Lane	Mountain Vista Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E88	Panama Lane	Renfro Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
E87	Panama Lane	SR 43/Enos Lane	Allen Road	6.00		2	4	2	12.0	2 Lane Additions	Construct 2 additional lanes		$6,246,786			$6,246,786	$6,246,786
E179	Panama Lane	SR 43/Enos Lane								Traffic Signals	Install Signal, State		$0	$250,000		$250,000	$250,000
E271	Panama Lane	SR 43/Enos Lane		0.75		2	6	4	3.0	Expand Intersection	Expand Intersection		$1,561,696			$1,561,696	$1,561,696
E182	Panama Lane	West Beltway								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B517	Panama Lane	Windermere Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B591	Panama Lane	Oswell Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B245	Panama Lane	Allen Road	Gosford Road	3.00	0.70	2	6	2	4.6	2 Lane Additions	Add 2 lanes	$0	$2,394,601		$0	$2,394,601	$2,394,601
B257	Panama Lane	Allen Road	Windermere Street							Relocate Canals	Relocate canal parallel w/so. r/w ~ 2165'	$0	$0		$695,601	$695,601	$695,601
B246	Panama Lane	Allen Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B250	Panama Lane	Cottonwood Road								Traffic Signals	Install Signal/Expand Intersection	$0	$611,249	$190,000	$0	$801,249	$801,249
B251	Panama Lane	Fairfax Road								Traffic Signals	Install Signal/Expand Intersection	$0	$611,249	$190,000	$0	$801,249	$801,249
B253	Panama Lane	Gosford Road	Stine Road	1.00		3	6	1	1.0	1 Lane Additions	Add 1 lanes	$0	$520,565		$0	$520,565	$520,565
B252	Panama Lane	Mountain Ridge Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B255	Panama Lane	Old River Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B256	Panama Lane	Reliance Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B258	Panama Lane	South Union Avenue	Cottonwood Road	1.00		2	4	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B244	Panama Lane	South Union Avenue 1200' w/o	South Union Avenue	1.00		4	6	2	2.0	1 Lane Additions	Widen deficient section only	$0	$1,041,131		$0	$1,041,131	$1,041,131
B261	Panama Lane	Sunset RR								Improve Railroad Grade Crossings	Improve grade crossing at Sta. 186+70 (Sunset)	$0	$0		$500,000	$500,000	$500,000
B266	Panama Road	Cottonwood Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B267	Panama Road	Fairfax Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B268	Panama Road	South Union Avenue	SP RR	4.50		2	4	2	9.0	2 Lane Additions	Add 2 lanes	$0	$4,685,089		$0	$4,685,089	$4,685,089
B269	Panama Road	South Union Avenue								Modified Traffic Signals	Signal Modification	$0	$0	$95,000	$0	$95,000	$95,000
B263	Panama Road	South Union Avenue 0.4 mi e/o	South Union Avenue 0.9 mi e/o							Relocate Canals	Relocate Parallel Canal, So./side rdwy. @ Sta. 21+40 - 48+50	$0	$0		$248,473	$248,473	$248,473
B264	Panama Road	South Union Avenue 0.95 mi e/o								Canal Culverts	Widen canal culvert at Sta. 50+30, Imp Gr Xing @ RR	$0	$0		$171,150	$171,150	$171,150
B265	Panama Road	South Union Avenue 2.0 mi e/o	SR 184/Weedpatch Highway 0.3 mi w/o							Relocate Canals	Relocate parallel canal from Sta. 106+66 - 247+10	$0	$0		$1,287,657	$1,287,657	$1,287,657
B270	Panama Road	SP RR	SR 184/Weedpatch Highway 0.2 mi w/o	0.30		2	4	2	0.6	2 Lane Additions	Add 2 lanes	$0	$312,339		$0	$312,339	$312,339
B271	Panama Road	SR 184/Weedpatch Highway								Modified Traffic Signals	Signal Modification, State	$0	$0	$125,000	$0	$125,000	$125,000
B262	Panama Road	SR 184/Weedpatch Highway 0.2 mi w/o	SR 184/Weedpatch Highway	0.20		2	4	2	0.4	2 Lane Additions	Add 2 lanes	$0	$208,226		$0	$208,226	$208,226
B554	Panorama Drive	Queen Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B277	Patton Way	Downing Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B520	Patton Way	Meany Avenue	SR 58/Rosedale Highway	0.75		2	4	2	1.5	2 Lane Additions	Add 2 lanes	$167,552	$480,485		$764,061	$1,412,098	$1,412,098
B279	Patton Way	Meany Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B476	Pensinger Road	Windermere Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B521	Quail Creek Road	Norris Road	7th Standard Road	1.50		0	4	4	6.0	2 Lane Additions	Construct 2 lanes	$0	$1,921,941		$0	$1,921,941	$1,921,941
E168	Redbank Road	Fairfax Avenue	SR 184/Weedpatch Highway	1.00		2	4	2	2.0	2 Lane Additions	Construct 2 additional lanes		$640,647		$171,150	$811,797	$811,797
B525	Renfro Road	7th Standard Road	Olive Drive	1.50		0	4	2	3.0	2 Lane Additions	Construct 2 lanes	$0	$1,561,696		$122,250	$1,683,946	$1,683,946
B283	Renfro Road	Brimhall Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E315	Renfro Road	Goose Lake Slough								Canal Culverts	Widen Canal Culvert South of Brimhall Road	$0	$400,000			$400,000	$400,000
B284	Renfro Road	Johnson Road	Stockdale Highway	0.50	0.30	2	4	2	0.4	2 Lane Additions	Add 2 lanes	$0	$208,226		$0	$208,226	$208,226
B285	Renfro Road	Johnson Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B287	Renfro Road	Meacham Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B524	Renfro Road	Olive Drive	Reina Road	0.50		0	4	2	1.0	2 Lane Additions	Construct 2 lanes	$0	$520,565		$0	$520,565	$520,565
B289	Renfro Road	Palm Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B290	Renfro Road	Reina Road	Johnson Road	3.70	1.20	2	4	2	5.0	2 Lane Additions	Add 2 lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
B560	Renfro Road	Santa Fe Way/BNSF RR								Railroad Grade Separations	Railroad Grade Separation	$0	$0		$18,000,000	$18,000,000	13,000,000
B544	Santa Fe Way	Rudd Road (West Beltway)	Hageman Road	2.00		2	4	2	4.0	2 Lane Additions	Add 2 lanes	$0	$2,082,262		$0	$2,082,262	$2,082,262
B594	Sante Fe Way	Reina Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B313	Snow Road	Allen Road	Old Farm Road	0.50		3	4	1	0.5	1 Lane Additions	1 on north side	$0	$260,283		$0	$260,283	$260,283
B316	Snow Road	Calloway Drive	Quail Creek Road	0.50	0.40	2	6	2	0.2	2 Lane Additions	Add 2 Lanes	$0	$104,113		$426,652	$530,765	$530,765
B317	Snow Road	Calloway Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B318	Snow Road	Coffee Road	Fruitvale Avenue	1.00		3	6	1	1.0	1 Lane Additions	Add 1 lane	$0	$520,565		$500,000	$1,020,565	$1,020,565
B319	Snow Road	Coffee Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B320	Snow Road	Fruitvale Avenue	Golden State Highway	0.35		2	6	2	0.7	2 Lane Additions	Add 2 lanes	$0	$364,396		$0	$364,396	$364,396
B321	Snow Road	Fruitvale Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
B323	Snow Road	Jenkins Road	Allen Road	0.50		0	4	4	2.0	2 Lane Additions	Construct 2 lanes	$0	$1,041,131		$274,382	$1,315,513	$1,315,513
B324	Snow Road	Jewetta Avenue	Calloway Drive	1.00		3	6	1	1.0	1 Lane Additions	1 on north side	$0	$520,565		$305,625	$826,190	$826,190
B325	Snow Road	Old Farm Road	Jewetta Avenue	0.50		3	6	1	0.5	1 Lane Additions	1 on north side	$0	$260,283		$0	$260,283	$260,283
B530	Snow Road	Old Farm Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B326	Snow Road	Patton Way								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B327	Snow Road	Quail Creek Road	Coffee Road	0.50		2	6	2	1.0	2 Lane Additions	Add 2 lanes	$0	$520,565		$611,249	$1,131,815	$1,131,815
B596	Snow Road	Quail Creek Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B314	Snow Road	Renfro Road/Jenkins Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B322	Snow Road	SR 204/Golden State Highway								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B331	Snow Road	Verdugo Lane								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B700	South Beltway	I-5	SR 58	25.00		0	2	2	50.0	R/W Only	Acquisition of Right-of-way	$20,000,000	$0			$20,000,000	$20,000,000
B333	South H Street	Arvin-Edison Canal	Hosking Avenue	0.75		2	4	2	1.5	2 Lane Additions	Add 2 lanes	$0	$780,848		$0	$780,848	$780,848
B334	South H Street	Hosking Avenue	Taft Highway	1.00		2	4	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B332	South H Street	Taft Highway	White Lane							Relocate Canals	Relocate Canal	$0	$1,500,000		$1,936,437	$3,436,437	$3,436,437
B338.1	South Union Avenue	Taft Highway	White Lane	3.50		4	6	2	7.0	2 Lane Additions	Add 2 lanes	$0	$3,643,958		$0	$3,643,958	$3,643,958
B607	SR 119/Taft Highway	Akers Road								Traffic Signals	Install signals, State	$0	$0	$250,000		$250,000	$250,000
E112	SR 119/Taft Highway	Allen Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B339	SR 119/Taft Highway	Ashe Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B341	SR 119/Taft Highway	Buena Vista Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B342	SR 119/Taft Highway	Mountain Ridge Drive								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B532	SR 119/Taft Highway	Mountain Vista Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B344	SR 119/Taft Highway	Old River Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B533	SR 119/Taft Highway	Reliance Drive								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B346	SR 119/Taft Highway	Stine Road								Modified Traffic Signals	Signal Modification, State			$125,000		$125,000	$125,000
B347	SR 119/Taft Highway	Wible Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B340	SR 119/Taft Highway	Buena Vista Road	SR 99	5.90		2	4	2	11.8	2 Lane Additions	R/W & Constr. Cost Based on Program Unit Costs	$0	$0		$16,800,000	$16,800,000	$16,800,000
E111	SR 119/Taft Highway	I-5	Buena Vista Road	5.50		2	4	2	11.0	2 Lane Additions	Construct 2 additional lanes		$0		$12,500,000	$12,500,000	$12,500,000
E330	SR 119/Taft Highway	I-5								State Hwy Bridges, Interchanges	Improve Interchange	$0	$0		$7,000,000	$7,000,000	$7,000,000
B410	SR 119/Taft Highway	SR 99	South Union Avenue	1.10		2	4	2	2.2	2 Lane Additions	Add 2 lanes	$0	$1,145,244		$0	$1,145,244	$1,145,244
B345	SR 119/Taft Highway	SR 99								State Hwy Bridges, Interchanges	Improve Interchange	$0	$0		$7,334,988	$7,334,988	$7,334,988
E313	SR 119/Taft Highway	Stine Canal								Canal Culverts	Construct Canal Culvert East of Gosford Road	$0	$1,200,000			$1,200,000	$1,200,000
B350	SR 178	Edison Road								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
E118	SR 178	M Street	Fairfax Road	5.25		6	8	2	10.5	Freeway Projects	Construct freeway with interchanges , REGIONAL		$0		$82,500,000	$82,500,000	$72,105,000
E278	SR 178	Miramonte Drive	Rancheria Drive	0.80		2	6	4	3.2	4 Lane Additions	add 4 lanes		$0		$8,000,000	$8,000,000	$8,000,000
E261	SR 178	SR 204/Golden State Avenue								State Hwy Bridges, Interchanges	Improve Connection , REGIONAL		$0		$20,000,000	$20,000,000	$17,480,000
E233	SR 178	Various								State Hwy Bridges, Interchanges	Ramp Improvements - Various Locations, REGIONAL		$0		$20,000,000	$20,000,000	$17,480,000
B422	SR 178	Vineland Road								State Hwy Bridges, Interchanges	Construct Interchange	$0	$16,962,161		$13,037,839	$30,000,000	$30,000,000
E253	SR 178	Vineland Road	Miramonte Drive							4 Lane Additions	Widening - add 2 Lanes, 4 to 6		$0		$86,630,000	$86,630,000	$86,630,000
E333	SR 178 (TRIP)	Vineland Road	Miramonte Drive							2 Lane Additions	Widening - TRIP add 2 Lanes, 2 to 4		$0		$36,512,000	$36,512,000	$19,075,000
E251	SR 178 (TRIP)	Morning Drive								State Hwy Bridges, Interchanges	Construct interchanges - TRIP		$0		$58,787,000	$58,787,000	$6,743,000
E259	SR 178/24th Street (TRIP)	Buck Owens Boulevard	M Street							Freeway Projects	Roadway Widening - TRIP , REGIONAL		$0		$34,040,000	$34,040,000	$13,965,646
E258	SR 178/24th Street (TRIP)	Oak Street	SR 99							Expand Intersection	Interchange Improvements - TRIP		$0		$19,025,000	$19,025,000	$2,182,000
B369	SR 184/Kern Canyon Road	Chase Avenue								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
B587	SR 184/Kern Canyon Road	Mesa Marin Drive								Traffic Signals	Install Signal, STATE	$0	$0	$250,000	$0	$250,000	$250,000
B555	SR 184/Kern Canyon Road	Monica Street								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
B370	SR 184/Kern Canyon Road	Morning Drive	SR 178	2.50		2	6	2	5.0	2 Lane Additions	Add 2 lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
B371	SR 184/Kern Canyon Road	Vineland Road								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
B358	SR 184/Morning Drive	Breckenridge Road								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
B359	SR 184/Morning Drive	Edison Highway	Niles Street	1.25		2	6	4	5.0	4 Lane Additions	Add 4 lanes	$0	$2,602,827		$0	$2,602,827	$2,602,827
B361	SR 184/Morning Drive	Eucalyptus Drive								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
B357	SR 184/Weedpatch Highway	Hermosa Road 0.54 mi n/o								Canal Culverts	Widen canal box culvert at Sta. 187+00	$0	$0		$134,475	$134,475	$134,475
B363	SR 184/Weedpatch Highway	Panama Road	SR 58	5.80		2	4	2	11.6	2 Lane Additions	Add 2 lanes	$0	$6,038,560		$0	$6,038,560	$6,038,560
B282	SR 184/Weedpatch Highway	Redbank Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B366	SR 184/Weedpatch Highway	SR 58 E/B & W/B Ramps								Traffic Signals	Install Signal, State 2 Signals	$0	$0	$250,000	$250,000	$500,000	$500,000
B364	SR 184/Weedpatch Highway	UP RR								Railroad Grade Separations	Construct grade separation at Sta. 335+40	$0	$0		$20,000,000	$20,000,000	15,000,000
B367	SR 184/Weedpatch Highway	White Lane/Muller Road								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
B368	SR 184/Weedpatch Highway	Wilson Road								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
E235	SR 204/Golden State Avenue	Airport Drive	SR 178							2 Lane Additions	Add 2 lanes, REGIONAL		$0		$30,000,000	$30,000,000	$26,220,000
E310	SR 204/Golden State Avenue	Calloway Canal								Canal Bridges	Widen Canal Bridge, REGIONAL	$0	$0		$600,000	$600,000	$524,400
E309	SR 204/Golden State Avenue	Carrier Canal								Canal Bridges	Widen Canal Bridge, REGIONAL	$0	$0		$600,000	$600,000	$524,400
E312	SR 204/Golden State Avenue	Chester Avenue								State Hwy Bridges, Interchanges	Bridge Widening, REGIONAL	$0	$0		$6,000,000	$6,000,000	$5,244,000
E311	SR 204/Golden State Avenue	Kern River								Kern River Bridges	Widen River Bridge 2 lanes .2 Miles, REGIONAL	$0	$0		$8,000,000	$8,000,000	$6,992,000
E236	SR 204/Golden State Highway	F Street								State Hwy Bridges, Interchanges	Construct interchange, REGIONAL		$0		$20,000,000	$20,000,000	$17,480,000
E266	SR 43/Enos Lane	I-5 EB								Traffic Signals	Install Signal, State		$0	$250,000		$250,000	$250,000
E269	SR 43/Enos Lane	I-5 EB		0.25		2	6	4	1.0	Expand Intersection	Expand Intersection		$520,565			$520,565	$520,565
E265	SR 43/Enos Lane	I-5 WB								Traffic Signals	Install Signal, State		$0	$250,000		$250,000	$250,000
E270	SR 43/Enos Lane	I-5 WB		0.25		2	6	4	1.0	Expand Intersection	Expand Intersection		$520,565			$520,565	$520,565
E273	SR 43/Enos Lane	SR 58/Rosedale Highway		1.00		2	6	4	4.0	Expand Intersection	Expand Intersection		$2,082,262			$2,082,262	$2,082,262
E272	SR 43/Enos Lane	Stockdale Highway		1.00		2	6	4	4.0	Expand Intersection	Expand Intersection		$2,082,262			$2,082,262	$2,082,262
E142	SR 43/Enos Lane	Stockdale Highway								Traffic Signals	Install Signal, State		$0	$250,000		$250,000	$250,000
E107	SR 58	Cottonwood Road	Fairfax Road	2.00		6	8	2	4.0	Freeway Projects	Construct freeway with interchanges, REGIONAL		$16,000,000			$16,000,000	$12,920,000
B373	SR 58	Real Road	Cottonwood Road	3.00	0.50	4	8	4	10.0	Freeway Projects	Add 2 lanes, REGIONAL	$0	$40,000,000		$40,000,000	$80,000,000	$64,600,000
E234	SR 58	Various								State Hwy Bridges, Interchanges	Ramp Improvements - Various Locations, REGIONAL		$20,000,000			$20,000,000	$17,480,000
B379	SR 58/Rosedale Highway	Enos Lane	Gibson Road							Modified Traffic Signals	Signal Modification	$0	$0	$95,000	$124,988	$219,988	$219,988
E102	SR 58/Rosedale Highway	Driver Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B382	SR 58/Rosedale Highway	Enos Lane								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B383	SR 58/Rosedale Highway	Fruitvale Avenue								Modified Traffic Signals	Signal Modification, State			$125,000		$125,000	$125,000
B385	SR 58/Rosedale Highway	Gibson Street								Modified Traffic Signals	Signal Modification, State			$125,000		$125,000	$125,000
E103	SR 58/Rosedale Highway	Greeley Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B386	SR 58/Rosedale Highway	Heath Road								Traffic Signals	Install Signal			$190,000		$190,000	$190,000
B389	SR 58/Rosedale Highway	Landco Drive								Traffic Signals	Signal Modification, State			$125,000		$125,000	$125,000

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
B390	SR 58/Rosedale Highway	Mohawk Street								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B391	SR 58/Rosedale Highway	Nord Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B394	SR 58/Rosedale Highway	Renfro Road								Modified Traffic Signals	Signal Modification, State			$125,000		$125,000	$125,000
E105	SR 58/Rosedale Highway	Superior Road								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B601	SR 58/Rosedale Highway	Verdugo Lane								Modified Traffic Signals	Signal Modification, State			$125,000		$125,000	$125,000
E104	SR 58/Rosedale Highway	Wegis Avenue								Traffic Signals	Install Signal, State			$250,000		$250,000	$250,000
B375	SR 58/Rosedale Highway	Allen Road	Calloway Drive	2.00		4	6	2	4.0	2 Lane Additions	R/W & Constr. - Future		$8,819,000		$0	$8,819,000	$8,819,000
B381	SR 58/Rosedale Highway	Enos Lane (SR 43)	Allen Road	6.00		2	4	2	12.0	2 Lane Additions	R/W & Constr. Future		$0		$40,000,000	$40,000,000	$40,000,000
E256	SR 58/Rosedale Highway (TRIP)	Gibson Street	Calloway Drive	3.26		4	6	2	6.5	2 Lane Additions	add 2 lanes Widen Roadway - TRIP		$0		$20,840,000	$20,840,000	$2,390,000
B377	SR 58/Rosedale Highway (TRIP)	SJVRR								Railroad Grade Separations	Grade Separation @ Landco (W/o Landco Drive) - Future TRIP	$0	$0		$20,000,000	$20,000,000	$15,000,000
B395	SR 65/Porterville Highway	James Road	7th Standard Road	2.25		2	4	2	4.5	2 Lane Additions	Add 2 lanes	$0	$2,205,000		$0	$2,205,000	$2,205,000
E110	SR 99	7th Standard Road	Rosedale Highway 1.25 mi n/o	3.50		6	8	2	7.0	Freeway Projects	Freeway widening				$49,000,000	$49,000,000	$34,300,000
B396	SR 99	Olive Drive	SR 204/Golden State Highway	0.50		6	8	2	1.0	Freeway Projects	Widen for additional ramp lanes at Olive Drive		$0		$5,500,000	$5,500,000	$5,500,000
B397	SR 99	South H Street N/B Off Ramp								Traffic Signals	Install Signal, State	$0	$0	$250,000	$0	$250,000	$250,000
E334	SR 99	Snow Road								State Hwy Bridges, Interchanges	Construct Interchange, UPRR Grade Separation	$0	$0		$75,000,000	$75,000,000	$70,000,000
E232	SR 99	Various								State Hwy Bridges, Interchanges	Ramp Improvements - Various Locations, REGIONAL		$0		$20,000,000	$20,000,000	$17,480,000
B398.2	SR 99	Wilson Road	White Lane	1.00		6	8	2	2.0	Freeway Projects	Add 2 lanes, REGIONAL	$0	$10,000,000		$0	$10,000,000	$6,650,000
E178	SR 99	White Lane	SR 119/Taft Highway	3.60		6	8	2	7.2	Freeway Projects	Freeway widening		$36,000,000			$36,000,000	$25,200,000
B399	Stine Road	Berkshire Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B400	Stine Road	Hosking Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B401	Stine Road	McKee Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E94	Stine Road	SR 119/Taft Highway	Curnow Road	0.50		2	4	2	1.0	2 Lane Additions	Construct 2 lanes		$520,565			$520,565	$520,565
B403	Stine Road	Taft Highway	Panama Lane	2.00	0.75	2	4	2	2.5	2 Lane Additions	Add 2 lanes	$0	$1,301,414		$0	$1,301,414	$1,301,414
E181	Stockdale Highway	Greeley Road								Traffic Signals	Install Signal		$0	$190,000		$190,000	$190,000
B404	Stockdale Highway	Heath Road	Renfro Road	1.00		2	4	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B405	Stockdale Highway	Nord Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B406.1	Stockdale Highway	Renfro Road	New Stine Road	5.75		4	6	2	11.5	Construct Medians	Re-construct Median	$0	$700,000		$0	$700,000	$700,000
B408	Stockdale Highway	SP RR								Improve Railroad Grade Crossings	Improve RRX @ Buttonwillow	$0	$0		$122,250	$122,250	$122,250
B409	Stockdale Highway	West Metro Boundary	Heath Road	4.50		2	4	2	9.0	2 Lane Additions	Add 2 lanes	$0	$4,685,089		$0	$4,685,089	$4,685,089
E318	Truxtun Avenue	BNSF RR	Chester Avenue	2.00		4	6	6	12.0	2 Lane Additions	add 2 lanes, REGIONAL	$0	$40,000,000		$0	$40,000,000	$34,960,000
B414	Verdugo Lane	Meacham Road	Rosedale Highway	0.50		2	4	0		1 Lane Additions	East side	$0	$0		$305,625	$305,625	$305,625
B415	Verdugo Lane	Meacham Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B416	Verdugo Lane	Noriega Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B418	Verdugo Lane	Reina Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B419	Vineland Road	Edison Highway	Eucalyptus Drive	0.75		2	4	2	1.5	2 Lane Additions	Add 2 lanes	$0	$780,848		$0	$780,848	$780,848
B420	Vineland Road	Eucalyptus Drive	Pioneer Drive	0.25		2	4	2	0.5	2 Lane Additions	Add 2 lanes	$0	$260,283		$0	$260,283	$260,283
B556	Vineland Road	Highland Knolls Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B557	Vineland Road	Paladino Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B580	Vineland Road	SR 178	Paladino Drive	1.00		0	6	2	2.0	2 Lane Additions	Arterial	$0	$1,041,131		$0	$1,041,131	$1,041,131
B424	Vineland Road	SR 184/Kern Canyon Road	SR 178	1.00		0	4	2	2.0	2 Lane Additions	Construct 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B423	Vineland Road	SR 184/Morning Drive	Pioneer Drive	1.00		0	2	2	2.0	2 Lane Additions	Construct 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B425	Vineland Road	SR 58	Edison Highway	0.20		2	4	2	0.4	2 Lane Additions	Add 2 lanes	$0	$208,226		$0	$208,226	$208,226
B421	Vineland Road	UP RR								Railroad Grade Separations	Grade Separation	$0	$18,000,000			$18,000,000	$13,000,000
E231	West Beltway (TRIP)	7th Standard Road	SR 58/Rosedale Highway	4.00		0	4	4	16.0	Freeway Projects	Construct expressway - Future Trip		$0		$77,980,000	$77,980,000	$75,510,000
E245	West Beltway	Pacheco Road	Westside Parkway	4.00		0	4	4	16.0	Freeway Projects	Construct Expressway		$0		$88,680,000	$88,680,000	$88,680,000
E243	West Beltway	Taft Highway	Pacheco Road	1.00		0	4	4	4.0	Freeway Projects	Construct Expressway		$0		$54,750,000	$54,750,000	$54,750,000
E151	West Beltway	SR 58/Rosedale Highway	WSPW							Freeway Projects	Construct Expressway		$0		$52,760,000	$52,760,000	$52,760,000
E260	West Beltway	Westside Parkway								State Hwy Bridges, Interchanges	Construct local interchanges		$30,000,000			$30,000,000	$30,000,000
B514	West Ming Collector	Windermere Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B162	Westside Parkway Phase 1	SR 58/Rosedale Highway	Truxtun Avenue	1.25		0	6	4	5.0	Freeway Projects	Construct 6 lanes, River/Canal/RR & Widening	$0	$0		$40,690,000	$40,690,000	$0
E331	Westside Parkway Phase 2	Mohawk Street	Coffee Road							Freeway Projects	Construct freeway with interchanges	$0	$0		$100,580,000	$100,580,000	$0
B426	Westside Parkway Phase 3 (TRIP)	Coffee Road	Calloway Drive							Freeway Projects	Construct Freeway	$0	$0		$47,060,000	$47,060,000	$15,000,000
E177	Westside Parkway Phase 4 (Future TRIP)	Mohawk Street	Truxtun Avenue							Future Freeway Alignment	Construct freeway with interchanges - Future Trip , REGIONAL		$0		$33,820,000	$33,820,000	$0
E319	Westside Parkway Phase 5&6	Heath Road / Stockdale Hwy	Calloway Drive							Freeway Projects	Construct Fwy	$0	$0		$111,620,000	$111,620,000	$37,000,000
B536	White Lane	Allen Road	West Beltway	1.00		0	4	2	2.0	2 Lane Additions	Construct 2 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B536.1	White Lane	Buena Vista Road	Windermere Street	0.50		0	4	1	0.5	1 Lane Additions	Construct 1 lane	$0	$260,283		$0	$260,283	$260,283
B427	White Lane	Allen Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B575	White Lane	Lily Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B538	White Lane	Windermere Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B432	White Lane/Muller Road	Cottonwood Road	Fairfax Road	3.20		0	4	2	6.4	2 Lane Additions	Construct 2 lanes (S 1/2 Cottonwood Road to Washington Street)	$0	$3,331,619		$0	$3,331,619	$3,331,619
B604	White Lane/Muller Road	Cottonwood Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B435	White Lane/Muller Road	Fairfax Road								Traffic Signals	Install SIgnal	$0	$0	$190,000	$0	$190,000	$190,000
B605	White Lane/Muller Road	Oswell Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B442	Wible Road	SR 119/Taft Highway	Panama Lane	2.00	0.70	2	6	2	2.6	2 Lane Additions	Add 2 lanes	$0	$1,353,470		$0	$1,353,470	$1,353,470
B446	Administration									Computer Tracking System	Computer Tracking System (City & County)	$0	$0		$244,500	$244,500	$244,500
B444	Beltway Planning									Advance Planning/Studies	Advance Planning/Studies	$0	$0		$2,444,996	$2,444,996	$2,444,996
B447	Freeways									Freeway Projects	Freeway R/W	$11,202,044	$0		$0	$11,202,044	$11,202,044
B445.1	Gap projects											$0			$16,596,329	$16,596,329	$16,596,329
B448	Transit Costs											$0			$0	$0	$0
	Total								**581.1**							**Total Cost/Fee Funding**	* **$3,008,065,239** **$1,849,029,327**

BAKERSFIELD RTIF FACILITY LIST (CORE)*

E160	Airport Drive	Norris Road	Olive Drive	2.00		4	6	2	4.0	2 Lane Additions	Add 2 lanes, BORDER		$2,082,262			*	$1,041,131
B1	Airport Drive	Norris Road								Expand Intersection	Expand Intersection, BORDER	$687,656	$687,656		$0	*	$687,656
E185	Airport Drive	Olive Drive								Expand Intersection	BORDER		$500,000			*	$250,000
E237	34th Street Extension	Chester Avenue	F Street	0.28		0	4	4	1.1	4 Lane Additions	Construct 4 Lanes, REGIONAL		$30,000,000			*	$3,780,000
E306	34th Street Extension	UPRR								Railroad Grade Separations	Grade Separation, REGIONAL	$0	$0		$20,000,000	*	$2,520,000
B2	Airport Drive	Olive Drive n/o	State Road	0.60		4	6	2	1.2	2 Lane Additions	Add 2 lanes/Expand Intersection, BORDER	$0	$5,000,000		$0	*	$2,500,000
B3	Airport Drive	UP RR								Railroad Grade Separations	Widen RR Bridge, BORDER	$0	$0		$1,222,498	*	$611,249
B31	Bernard Street	Haley Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B44	Brundage Lane	Quantico Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000

1.97 REGIONAL TRANSPORTATION FACILITIES LIST - FY 2008-2035 Metropolitan Bakersfield Transportation Impact Fee Program

DRAFT 2/11/2013

Global Project Number	Street Name	LIMITS From	To	Improvement Length Miles	Completed Improvement Length Miles	Number of Lanes Striped	Number of Lanes Proposed	Lanes Funded by Fee	Number of Lane-Miles	Cat_desc	Notes	Cost R/W	Cost Construct.	Signal Cost	Additional/ Undifferent-iated Cost	Total Cost	Fee Funding
B45	Brundage Lane	SR 58 W/B Off Ramp to Cottonwood Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B46	Brundage Lane	Sterling Road								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B54	California Avenue	Edison Highway								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B55	California Avenue	Oak Street	A Street	0.50		2	3	1	0.5	1 Lane Additions	Widening south side	$64,548	$260,283		$0	$324,831	$324,831
B64.2	Casa Loma Drive	Cottonwood Road	Washington Street	0.50		0	4	4	2.0	4 Lane Additions	Construct 4 lanes	$0	$1,041,131		$0	$1,041,131	$1,041,131
B65	Casa Loma Drive	Cottonwood Road								Traffic Signals	Install Signal/Construct Expanded Intersection	$0	$1,833,747	$190,000	$0	$2,023,747	$2,023,747
B63	Casa Loma Drive	Madison Street 0.25 mi e/o								Canal Culverts	Widen canal culvert at Sta. 38+50	$0	$0		$48,900	$48,900	$48,900
B66	Casa Loma Drive	South Union Avenue	Cottonwood Road	1.00		2	4	2	2.0	Improve Railroad Grade Crossings	Improve grade crossing at Sta. 1+42	$0	$1,041,131		$122,250	$1,163,381	$1,163,381
B582	Casa Loma Drive	Union Avenue								Modified Traffic Signals	Signal Modification	$0	$0	$95,000	$0	$95,000	$95,000
E249	Centennial Corridor (TRIP)	Westside Parkway Terminus	SR 99/SR 58							Freeway Projects	Construct Freeway - TRIP , REGIONAL		$0		$644,586,000	*	$0
B77	Columbus Street	Alta Vista Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B281	Cottonwood Road	Planz Road								Traffic Signals	Install Signal/Expand Intersection	$0	$611,249	$190,000	$0	$801,249	$801,249
E163.2	Cottonwood Road	SR 58	Panama Road	6.00		2	4	2	12.0	2 Lane Additions	Add 2 lanes		$1,097,751			$1,097,751	$1,097,751
B79	Cottonwood Road	SR 58 E/B Off Ramp								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B84	East Belle Terrace	Cottonwood Road								Traffic Signals	Install Signal/Expand Intersection	$0	$305,625	$190,000	$0	$495,625	$495,625
B92	Fairfax Road	Highland Knolls Drive s/o	Niles Street	0.26		4	6	1	0.3	Construct Medians	Westside and Median, BORDER	$20,139	$135,347		$0	*	$77,743
B95	Fairfax Road	SR 58								State Hwy Bridges, Interchanges	Widen SR 58 bridge at Sta. 45+75, REGIONAL	$0	$0		$1,222,498	*	$154,035
B96	Fairfax Road	SR 58 Off Ramps								Traffic Signals	Install Signals (2nd signal cost in Additional costs), State, REGIONAL		$0	$250,000	$250,000	*	$63,000
B137	Hughes Lane	Ming Avenue	Terrace Way	0.75		0	2	2	1.5	2 Lane Additions	Construct 2 lanes	$1,633,869	$480,485		$0	$2,114,354	$2,114,354
E400	Madison Street	Arvin-Edison Intake canal								Canal Bridges	Construct canal bridge		$611,249		$0	$611,249	$611,249
B171	Monterey Street	Alta Vista Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B180	Mount Vernon Avenue	SR 58 W/B Ramp								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B183	Niles Street	Brentwood Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E224	Oak Street	21st Street		2.50						Expand Intersection	Expand Intersection		$500,000			$500,000	$500,000
B193	Oak Street	California Avenue	SR 178/24th Street	1.00		4	6	2	2.0	2 Lane Additions	Add 2 lanes, BORDER	$1,290,958	$1,041,131		$0	*	$1,166,044
E226	Oak Street/Wible Road	Ming Avenue		2.50						Expand Intersection			$500,000			$500,000	$500,000
B208	Old Stine Road	Ming Avenue	Belle Terrace	0.50		2	4	2	1.0	2 Lane Additions	Add 2 lanes	$403,424	$320,323		$0	$723,748	$723,748
B209	Old Stine Road	Stine Canal								Canal Culverts	Widen canal culvert (Stine Road)	$0	$0		$97,800	$97,800	$97,800
B222	Oswell Street	SR 178	Brundage Lane	2.00		4	6	2	4.0	Construct Medians	Median Reconstruction	$0	$2,082,262		$0	$2,082,262	$2,082,262
B223	Oswell Street	SR 58 Ramps								Traffic Signals	Install Signals, State	$0	$500,000	$250,000	$0	$750,000	$750,000
B272	Panorama Drive	Alta Vista Drive								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B593	Panorama Drive	Columbus Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B413	Panorama Drive	University Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B276	Panorama Drive	Wenatchee Avenue								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
B337	South Union Avenue	SJ RR								Improve Railroad Grade Crossings	Improve grade crossing at Sta. 265+16 (SJ RR)	$0	$0		$122,250	$122,250	$122,250
B338.2	South Union Avenue	White Lane	Casa Loma Drive	1.50		4	6	2	3.0	2 Lane Additions	Add 2 lanes	$0	$1,561,696		$0	$1,561,696	$1,561,696
E118	SR 178	M Street	Fairfax Road	5.25		6	8	2	10.5	Freeway Projects	Construct freeway with interchanges , REGIONAL		$0		$82,500,000	*	$10,395,000
E261	SR 178	SR 204/Golden State Avenue								State Hwy Bridges, Interchanges	Improve Connection , REGIONAL		$0		$20,000,000	*	$2,520,000
E233	SR 178	Various								State Hwy Bridges, Interchanges	Ramp Improvements - Various Locations, REGIONAL		$0		$20,000,000	*	$2,520,000
E259	SR 178/24th Street (TRIP)	Buck Owens Boulevard	M Street							Freeway Projects	Roadway Widening - TRIP , REGIONAL		$0		$34,040,000	*	$2,013,354
E235	SR 204/Golden State Avenue	Airport Drive	SR 178							2 Lane Additions	Add 2 lanes, REGIONAL		$0		$30,000,000	*	$3,780,000
E310	SR 204/Golden State Avenue	Calloway Canal								Canal Bridges	Widen Canal Bridge, REGIONAL	$0	$0		$600,000	*	$75,600
E309	SR 204/Golden State Avenue	Carrier Canal								Canal Bridges	Widen Canal Bridge, REGIONAL	$0	$0		$600,000	*	$75,600
E312	SR 204/Golden State Avenue	Chester Avenue								State Hwy Bridges, Interchanges	Bridge Widening, REGIONAL	$0	$0		$6,000,000	*	$756,000
E236	SR 204/Golden State Avenue	F Street								State Hwy Bridges, Interchanges	Construct interchange, REGIONAL		$0		$20,000,000	*	$2,520,000
E311	SR 204/Golden State Avenue	Kern River								Kern River Bridges	Widen River Bridge 2 lanes .2 Miles, REGIONAL	$0	$0		$8,000,000	*	$1,008,000
B372	SR 204/Union Avenue	Brundage Lane								Expand Intersection	Signal Modification/Expand Intersection	$0	$0	$95,000	$1,833,747	$1,928,747	$1,928,747
E107	SR 58	Cottonwood Road	Fairfax Road	2.00		6	8	2	4.0	Freeway Projects	Construct freeway with interchanges, REGIONAL		$16,000,000			*	$1,088,000
B373	SR 58	Real Road	Cottonwood Road	3.00	0.50	4	8	4	10.0	Freeway Projects	Add 2 lanes, REGIONAL	$0	$40,000,000		$40,000,000	*	$3,400,000
E234	SR 58	Various								State Hwy Bridges, Interchanges	Ramp Improvements - Various Locations, REGIONAL		$0		$20,000,000	*	$2,520,000
E232	SR 99	Various								State Hwy Bridges, Interchanges	Ramp Improvements - Various Locations, REGIONAL		$0		$20,000,000	*	$2,520,000
B398.2	SR 99	Wilson Road	White Lane	1.00		6	8	2	2.0	Freeway Projects	Add 2 lanes, REGIONAL	$0	$10,000,000		$0	*	$350,000
B406.2	Stockdale Highway	New Stine Road	Oak Street	1.25		4	6	2	2.5	Construct Medians	Median reconstruction	$0	$1,301,414		$0	$1,301,414	$1,301,414
E318	Truxtun Avenue	BNSF RR	Chester Avenue	2.00		4	6	6	12.0	2 Lane Additions	add 2 lanes, REGIONAL	$0			$40,000,000	*	$5,040,000
B412	University Avenue	Haley Street								Traffic Signals	Install Signal	$0	$0	$190,000	$0	$190,000	$190,000
E320	Westside Parkway Phase 4 (Future TRIP)	Mohawk Street	Truxtun Avenue							Freeway Projects	Construct Tie-in from WSPW to Truxtun Avenue, REGIONAL	$0	$0		$33,820,000	*	$0
B441	Wible Road	Ming Avenue	Brundage Lane	1.00		4	6	2	2.0	2 Lane Additions	Add 2 lanes	$0	$1,041,131		$1,222,498	$2,263,629	$2,263,629
B445.2	Gap projects											$0			$6,627,350	$6,627,350	$6,627,350
	Total								77.6 658.7			**Total Cost/Fee Funding**			*	**$31,126,112**	**$84,558,525**

*Note: Total cost for all REGIONAL projects shown in Non-Core section.

Grand Totals:	**$3039191352***	**$1,933,587,852**

DEPARTMENT OF TRANSPORTATION
DISTRICT 6 OFFICE
1352 WEST OLIVE AVENUE
P.O. BOX 12616
FRESNO, CA 93778-2616
PHONE (559) 445-5421
FAX (559) 488-4088
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life

February 28, 2020

06-KER-99-17.516
GPA/ZC 19-0292
SCH #2020029007

SENT VIA EMAIL

Mr. Steve Esselman
City of Bakersfield
1715 Chester Avenue
Bakersfield, CA 93301

Dear Mr. Esselman:

Thank you for the opportunity to review the Traffic Impact Study(TIS) for a proposed Love's Travel Stop. The project proposes a travel center that will consist of 16 auto fueling positions and 8 truck fueling positions, a 3,485 sq ft fast food restaurant, 11,166 sq ft convenience store and a 10,992 sq ft maintenance building. The project is located on the east side of State Route (SR) 99, in the northeast quadrant of "H" Street and SR 119, near the City of Bakersfield. Caltrans previously reviewed this project and provided comments on June 4, 2019 (Enclosed).

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development -Intergovernmental Review (LD-IGR) Program reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

Caltrans provides the *following comments* consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. The ITE Trip Generation Handbook was not used to estimate traffic volumes due to the limited information for a Truck Stop. Instead, a study from six different locations with similar land uses was used to estimate traffic volumes.

The TIS did not provide the referenced studies, as it was not included in the appendix. Therefore, the trip generation could not be verified. Caltrans requests that the traffic consultant provide the studies used to complete our review.

2. Synchro software was utilized for the capacity analysis. Please provide electronic files for all scenarios.

3. The study determined that approximately 88% of the trips will be diverted link trips generated from the SR 119 & SR 99 Interchange and an estimated 10% of the project traffic would be pass-by-trips. Therefore, 88% of the trips should be applied to the SB/NB off-ramps. Values in the Project Trip Distribution Table 2, Project Peak Hour Traffic Figures 4-10 and Intersection Analysis should be adjusted accordingly.

4. Annual growth rates of 0.15% to 3.0% as stated on page 7 were applied. The growth rates were determined based on existing developments and Kern COG traffic model data. Caltrans reviewed the annual growth rates and it appears that most (or some) intersections are within the growth rate range stated on page 7. However, at least one movement reviewed showed a growth rate higher than 3 percent. Additionally, no counts were provided for ramp movements. Caltrans recommends a complete traffic count information be provided to include the ramp movements and future impact.

5. Per the study, it was determined improvements may be needed by the year 2035 in order to maintain acceptable operations. The TIS indicated that improvements are already included in the City of Bakersfield's Traffic Impact Fee Program. Please verify that SR 119 & SR 99 interchange improvements are included in the City's Fee Program.

6. Per the study, the roadway segment from the SR 99 SB Off-Ramp to South H Street, is currently experiencing longer traffic delays. Also per the study, mitigation is needed when a project increases the delay in traffic.

If you have any other questions, please contact Lupita Mendoza, Transportation Planner, at (559) 488-4260.

Sincerely,

Lorena Mendibles

LORENA MENDIBLES, Chief
Transportation Planning –South

Greenfield County Water District

551 TAFT HIGHWAY PHONE (661) 831-0989
BAKERSFIELD, CALIFORNIA 93307

May 20, 2019

Aaron Oliver
Lane Engineers, Inc.
979 N. Blackstone St.
Tulare, CA 93274

Re: **Request for Water Service**
APN 517-03-08 and 517-03-06
SW Corner of Taft Hwy and South H St.
Acres: 18.96 +/-

Dear Mr. Oliver:

The Greenfield County Water District (District) conditionally agrees to serve an 18.96 +/- acre parcel being a portion of the above referenced property, for a maximum 26,000 s.f. of commercial property with an estimated demand of 11,500 g.p.d. (12.88 a.f.) per year at full build out. The decision is conditioned on the accuracy of the information provided on the record parcel maps submitted to our office on May 8, 2019 and on the following:

1. Subdivision of the 18.96 +/- acres as shown on the record parcel map.
2. Execution of the District's form of annexation agreement by the record owner of the property, including conveyance of any water rights appurtenant to the property or, at the District's election, execution of the District's Agency Agreement for Overlying Lands.
3. LAFCO approval of annexation into the District's service area.
4. Design, construction, and dedication of water distribution facilities in accordance with District criteria and standards in effect at the time of construction.

This letter does not create a contract to provide water service. This letter will be valid for one year from the date of this letter, and may be extended for one additional year, provided the developer is proceeding diligently to produce a final map.

If we may be of further service, please feel free to call.

Very truly yours,

Mel Johnson
General Manager

Kern County
Superintendent of Schools

Office of Mary C. Barlow ...advocates for children

RECEIVED
FEB 21 2020
CITY OF BAKERSFIELD
PLANNING DEPARTMENT

February 14, 2020

City of Bakersfield – Planning Department
Attn: Steve Esselman, Principle Planner
1715 Chester Ave.
Bakersfield, CA 93301

Our File No.: CI20-0004

RE: **DEVELOPER FEES FOR**: GPA/ZC No. 19-00929; Map. No. 124-31
(Northeast corner of Taft Hwy and H Street)

Dear Mr. Esselman,

This office represents the Greenfield Unioin Elementary and Kern High School Districts with regard to the imposition of developer fees, and appreciate the opportunity to respond on behalf of these districts regarding the proposed project. This letter is limited to addressing the possible effects which the project might have on school facilities created by students attributable to the project. It is not intended to address other possible environmental concerns which might be identified by the district(s) after reviewing it.

It is our determination that the above mentioned project proposing (1) an amendment of the Land Use Element of the *Metropolitan Bakersfield General Plan* land use designation from GC (General Commercial) to LI (Light Industrial), or a more restrictive district; and (2) a change in zone classification from C-2 (Regional Commercial) to M-1 (Light Manufacturing) or a more restrictive district will have no significant effects on either of these district's facilities so long as statutory school facilities fees, if any, are collected as required by law and that no further mitigation measures regarding school facilities are necessary.

Thank you for the opportunity to comment on the project. Should you have any questions, or if we can be of any further assistance in this matter, please contact me at 636-4599, or through e-mail at anwatson@kern.org.

Sincerely,

Mary C. Barlow
County Superintendent of Schools

Andrea Watson, Specialist
School District Facility Services

ALW
cc: District(s)

1300 17th Street – CITY CENTRE | Bakersfield, CA 93301-4533
(661) 636-4000 | FAX (661) 636-4130 | TDD (661) 636-4800 | www.kern.org

Pacific Gas and Electric Company

Plan Review Team
Land Management

PGEPlanReview@pge.com

6111 Bollinger Canyon Road 3370A
San Ramon, CA 94583

February 24, 2020

Steve Esselman
City of Bakersfield
1715 Chester Ave.
Bakersfield, CA 93301

Ref: Gas and Electric Transmission and Distribution

Dear Mr. Esselman,

Thank you for submitting Taft Highway and H St - GPAZC 19-0292 plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Pacific Gas and Electric Company

Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line ‘kicker blocks’, storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E’s ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4’) in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E’s facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING."**

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director
801 K Street, MS 18-05
Sacramento, CA 95814
T: (916) 445-9686

02/25/2020

Steve Esselman
1715 Chester Avenue, Bakersfield, CA 93301, USA

Construction Site Well Review (CSWR) ID: 1011811

Assessor Parcel Number(s): 51703006, 51703008

Property Owner(s): Elmer F. Karpe

Project Location Address: NE Corner of Taft Hwy and H St, Bakersfield, California, 93307

Project Title: GPA/ZC 19-0292

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells.

The Division of Oil, Gas, and Geothermal Resources (Division) has received and reviewed the above referenced project dated 2/25/2020. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in Kern County, within the boundaries of the following fields:

Our records indicate there are 0 known oil or gas wells located within the project boundary as identified in the application.

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation

Gavin Newsom, Governor
David Shabazian, Director
801 K Street, MS 18-05
Sacramento, CA 95814
T: (916) 445-9686

or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues.

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Inland district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency.

Should you have any questions, please contact me at (661) 326-6016 or via email at Victor.Medrano@conservation.ca.gov

Sincerely,

Cameron Campbell
District Deputy

Kern Delta Water District
501 TAFT HIGHWAY
BAKERSFIELD, CALIFORNIA 93307-6247
TELEPHONE (661) 834-4656
FAX (661) 836-1705

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Chief Operating Officer
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Bryan C. Duncan
Controller
McMurtrey, Hartsock & Worth
Attorneys-at-Law

February 27, 2020

Mr. Steve Esselman
Development Services Department
1715 Chester Avenue
Bakersfield, CA 93301

Dear Mr. Esselman,

Kern Delta Water District (District) appreciates the opportunity to comment on the "General Plan Amendment/Zone Change No. 19-0292". The District owns an easement to operate the Kern Island Canal, which is on the western edge of the subject property. While Kern Delta is not opposed to the project or land-use changes, we do want to highlight our concerns regarding potential impacts to the Kern Island Canal that will need to be addressed by the City and/or the project:

1. The future widening of South H Street between the northern boundary of the project and Taft Highway (the current plan depicts an encroachment into the current Kern Island Canal ROW that is unacceptable to the District).

2. Access to the project from South H Street that requires crossing the Kern Island Canal.

Based on the current information that has been provided, the District has significant questions/concerns about how this project may impact the District's ability to operate and maintain the Kern Island Canal. Therefore, the District is requesting a meeting with the appropriate City staff to discuss the canal and street easements issues. The District will reserve further comment until such a meeting can occur.

Sincerely,

L. Mark Mulkay
Kern Delta Water District
General Manager

LMM/dld
cc: KDWD File

DEPARTMENT OF TRANSPORTATION
DISTRICT 6 OFFICE
1352 WEST OLIVE AVENUE
P.O. BOX 12616
FRESNO, CA 93778-2616
PHONE (559) 445-5421
FAX (559) 488-4088
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life

February 28, 2020

06-KER-99-17.516
GPA/ZC 19-0292
SCH #2020029007

SENT VIA EMAIL

Mr. Steve Esselman
City of Bakersfield
1715 Chester Avenue
Bakersfield, CA 93301

Dear Mr. Esselman:

Thank you for the opportunity to review the Traffic Impact Study(TIS) for a proposed Love's Travel Stop. The project proposes a travel center that will consist of 16 auto fueling positions and 8 truck fueling positions, a 3,485 sq ft fast food restaurant, 11,166 sq ft convenience store and a 10,992 sq ft maintenance building. The project is located on the east side of State Route (SR) 99, in the northeast quadrant of "H" Street and SR 119, near the City of Bakersfield. Caltrans previously reviewed this project and provided comments on June 4, 2019 (Enclosed).

The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development -Intergovernmental Review (LD-IGR) Program reviews land use projects and plans through the lenses of our mission and state planning priorities of infill, conservation, and travel-efficient development. To ensure a safe and efficient transportation system, we encourage early consultation and coordination with local jurisdictions and project proponents on all development projects that utilize the multimodal transportation network.

Caltrans provides the *following comments* consistent with the State's smart mobility goals that support a vibrant economy and sustainable communities:

1. The ITE Trip Generation Handbook was not used to estimate traffic volumes due to the limited information for a Truck Stop. Instead, a study from six different locations with similar land uses was used to estimate traffic volumes.

The TIS did not provide the referenced studies, as it was not included in the appendix. Therefore, the trip generation could not be verified. Caltrans requests that the traffic consultant provide the studies used to complete our review.

2. Synchro software was utilized for the capacity analysis. Please provide electronic files for all scenarios.

3. The study determined that approximately 88% of the trips will be diverted link trips generated from the SR 119 & SR 99 Interchange and an estimated 10% of the project traffic would be pass-by-trips. Therefore, 88% of the trips should be applied to the SB/NB off-ramps. Values in the Project Trip Distribution Table 2, Project Peak Hour Traffic Figures 4-10 and Intersection Analysis should be adjusted accordingly.

4. Annual growth rates of 0.15% to 3.0% as stated on page 7 were applied. The growth rates were determined based on existing developments and Kern COG traffic model data. Caltrans reviewed the annual growth rates and it appears that most (or some) intersections are within the growth rate range stated on page 7. However, at least one movement reviewed showed a growth rate higher than 3 percent. Additionally, no counts were provided for ramp movements. Caltrans recommends a complete traffic count information be provided to include the ramp movements and future impact.

5. Per the study, it was determined improvements may be needed by the year 2035 in order to maintain acceptable operations. The TIS indicated that improvements are already included in the City of Bakersfield's Traffic Impact Fee Program. Please verify that SR 119 & SR 99 interchange improvements are included in the City's Fee Program.

6. Per the study, the roadway segment from the SR 99 SB Off-Ramp to South H Street, is currently experiencing longer traffic delays. Also per the study, mitigation is needed when a project increases the delay in traffic.

If you have any other questions, please contact Lupita Mendoza, Transportation Planner, at (559) 488-4260.

Sincerely,

Lorena Mendibles

LORENA MENDIBLES, Chief
Transportation Planning –South

CONDITIONS AND ORDINANCE COMPLIANCE

The following are specific items that you need to resolve before you can obtain a building permit or be allowed occupancy. These items include conditions and/or mitigation required by previous site entitlement approvals (these will be specifically noted), changes or additions that need to be shown on the final building plans, alert you to specific fees, and other conditions for your project to satisfy the City's development standards.

The items listed below will usually need to be shown on the final building plans or completed before a building permit is issued. As part of the building permit submittal, identify the location of your response by using the *APPLICANT'S RESPONSE* line provided directly below the item (example: sheet number, detail, etc.).

A. <u>DEVELOPMENT SERVICES - BUILDING (1715 Chester Avenue)</u>
(Staff contact - Oscar Fuentes; 661-326-3676 or OFuentes@bakersfieldcity.us)

1. Prior to review of improvement plans by the City, the developer shall submit a grading plan for the proposed site to be reviewed and approved by the City Engineer and Building Official (Bakersfield Municipal Code Section 16.44.010). With the grading plan, if the project is subject to the provisions of the National Pollutant Discharge Elimination System (NPDES), a Notice of Intent (NOI) to comply with the terms of the General Permit to Discharge Storm Water Associated with Construction Activity (WQ Order No. 99-08-DWQ) must be filed with the State Water Resources Control Board in Sacramento before the beginning of any construction activity. Compliance with the general permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared, continuously carried out, and always be available for public inspection during normal construction hours.

   APPLICANT'S RESPONSE:_____

2. A grading permit is required prior to final plan approval. The developer shall submit four (4) copies of grading plans and two (2) copies of the preliminary soils report to the Building Division. A final soils report shall also be submitted to the Building Division before they can issue a building permit. Please note that grading plans must be consistent with the final building site plans and landscaping plans. Building permits will not be issued until the grading permit is approved by the Building Division, Planning Division (HCP), and Public Works Department.

   APPLICANT'S RESPONSE:_____

3. Show on the final building plan pedestrian access from the public way and accessible parking. Private streets are not the public way.

   APPLICANT'S RESPONSE:_____

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4. The developer shall include fire resistive wall construction details with the final building plans for all exterior walls of any building that is within the distance as set forth in Table 602 of the California Building Code.

   APPLICANT'S RESPONSE:_____

5. Include with or show on the final building plans information necessary to verify that the project complies with all accessibility requirements of Title 24 of the California Building Code.

   APPLICANT'S RESPONSE:_____

6. The developer shall obtain all required approvals from the Kern County Environmental Health Services Department (2700 "M" Street, Bakersfield, CA., 93301; PH 661-862-8700) for any food handling facility (i.e.: market, delicatessen, café, concession, restaurant) before building permits can be issued.

   APPLICANT'S RESPONSE:_____

7. Buildings or structures shall require installation of an automatic fire sprinkler system where required by current California Building Code and City ordinance.

   APPLICANT'S RESPONSE:_____

8. The Building Division will calculate and collect the appropriate school district impact fee at the time they issue a building permit.

   APPLICANT'S RESPONSE:_____

9. Final Building plans shall show pedestrian access pathways or easements for persons with disabilities from public rights-of-ways that connect to all accessible buildings, facilities, elements, and spaces in accordance with the California Building Code. These pedestrian access ways shall not be parallel to vehicular lanes unless separated by curbs or railings.

   APPLICANT'S RESPONSE:_____

10. Prior to granting occupancy, the Building Division will verify that a water meter serving the development is in place. Therefore, it is recommended that the developer contact the applicable water purveyor to inquire about their process for obtaining water service for the development as soon as possible. To determine who the water purveyor for the development is, you may contact the City of Bakersfield Water Resources Department (1000 Buena Vista Road, Bakersfield, CA, phone: 661-326-3715).

    APPLICANT'S RESPONSE:_____

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11. Show on the final building plan, electric vehicle supply equipment to facilitate future installation as required by the California Green Code.

APPLICANT'S RESPONSE:_____

B. DEVELOPMENT SERVICES - PLANNING (1715 Chester Avenue)
(Staff contact – Kassandra Gale; 661-326-3411 or kgale@bakersfieldcity.us)

1. The minimum parking required for this project has been computed based on use and shall be as follows:

Proposed Use	Square Footage	Parking Ratio	Required Parking
Convenience Store	11,177 SF	1/200 SF	56 Spaces
Fast Food Restaurant	3,629 SF	1/75 SF	48 Spaces
Maintenance Building	10,992 SF	1/500 SF	22 Spaces
Fuel Pumps Credit	8 Fuel Pumps	2 Spaces/1 Pump	(16 Spaces)
		Required Parking:	110 Spaces

(**Note:** 193 parking spaces are shown on the proposed site plan. By ordinance, compact and tandem spaces cannot be counted towards meeting minimum parking requirements. For commercial development containing a multi-tenant pad, any change in use where 50 percent or more of the pad requires additional parking pursuant to Bakersfield Municipal Section 17.58.110, the Planning Director may require parking commensurate with the new use.)

APPLICANT'S RESPONSE:_____

2. Minimum parking stall dimensions shall be 9 feet wide by 18 feet long and shall be designed according to standards established by the Traffic Engineer. Vehicles may hang over landscape areas no more than 2-1/2 feet provided required setbacks along street frontages are maintained, and trees and shrubs are protected from vehicles.

APPLICANT'S RESPONSE:_____

3. All parking lots, driveways, drive aisles, loading areas, and other vehicular access ways, shall be paved with concrete, asphaltic concrete, or other paved street surfacing material in accordance with the Bakersfield Municipal Code (Sections 15.76.020 and 17.58.060.A.).

APPLICANT'S RESPONSE:_____

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4. Lighting is required for all parking lots, except residential lots with four units or less (Section 17.58.060.A.). Illumination shall be evenly distributed across the parking area with light fixtures designed and arranged so that light is directed downward and is reflected away from adjacent properties and streets. Use of glare shields or baffles may be required for glare reduction or control of back light. No light poles, standards and fixtures, including bases or pedestals, shall exceed a height of 40 feet above grade. However, light standards placed less than 50 feet from residentially zoned or designated property, or from existing residential development, shall not exceed a height of 15 feet. The final building plans shall include a picture or diagram of the light fixtures being used and show how light will be directed onto the parking area.

   (**Note:** Staff can require additional adjustments to installed lighting after occupancy to resolve glare or other lighting problems if they negatively affect adjacent properties.)

   APPLICANT'S RESPONSE:_____

5. The developer shall include a copy of a final landscape plan with each set of the final building plans submitted to the Building Division. Building permits will not be issued until the Planning Division has approved the final landscape plan for consistency with approved site plans and minimum ordinance standards. **Please refer to the landscaping requirements in Chapter 17.61.** Landscape plans shall include, but are not limited to, data on: gallon/box size, spacing, species (reference approved parking lot tree list), ratio of deciduous vs. evergreen, shade calculations, ground cover calculations, etc.

   (**Note 1:** At the time a final site inspection is conducted, it is expected that plants will match the species identified and be installed in the locations consistent with the approved landscape plan. Changes made without prior approval of the Planning staff may result in the removal and/or relocation of installed plant materials and delays in obtaining building occupancy.)

   (**Note 2:** Upon approval of the final landscape plan, a digital copy shall be submitted to the Planning staff contact listed above.)

   APPLICANT'S RESPONSE:_____

6. A solid masonry wall shall be constructed adjacent to residentially zoned and/or designated property. This wall must be shown on the final building plans and shall be constructed a minimum height of 6 feet as measured from the highest adjacent finished property grade. If the parking lot, including drive aisles, delivery areas, loading and unloading areas are within 10 feet of residentially zoned property, a 7-foot wide landscape strip that includes landscaping consistent with Chapter 17.61 shall be installed between the wall and parking/drive areas.

   APPLICANT'S RESPONSE:_____

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7. Street addresses for the project shall be designated by staff. These numbers will be the only addresses assigned by the city unless you wish to have a different address program. Internal building unit addresses will be only by suite number and will be the responsibility of the owner or developer to assign to each tenant. Please contact the Karl Davisson at 661-326-3594 for further information.

(**Note:** It is recommended that you assign suite numbers beginning with 100, 200, 300 etc. instead of an alphabetic character. If in the future a tenant space were split, you would then be able to assign a suite number between the existing numbers, which would keep your suites in numerical order. Keeping an orderly numbering system will make it easier for customers, emergency personnel, and mail delivery to find the business.)

APPLICANT'S RESPONSE:_____

8. Business identification signs are **neither considered nor approved** under this review (e.g. wall, monument, pylon, etc.). A separate sign permit reviewed by the Planning and Building Divisions and issued by the Building Division, is required for all new signs, including future use and construction signs.

(**Note:** Signs must comply with the Sign Ordinance; Chapter 17.60 of the Bakersfield Municipal Code. Review this Chapter as part of due diligence. If deviations are requested from the Sign Ordinance, approval by the Planning Commission is required.)

APPLICANT'S RESPONSE:_____

9. The following conditions are required as part of a grading permit:

a. Habitat Conservation fees shall be required for this project and will be calculated based on the fee in effect at the time we issue an urban development permit (includes grading plan approvals) as defined in the Implementation/Management Agreement (Section 2.21) for the Metropolitan Bakersfield Habitat Conservation Plan. Upon payment of the fee, the applicant will receive acknowledgment of compliance with Metropolitan Bakersfield Habitat Conservation Plan (Implementation/Management Agreement Section 3.1.4). This fee is currently $2,145 per gross acres, payable to the City of Bakersfield (submit to the Planning Division). This fee must be paid before any grading or other site disturbance occurs.

Forms and instructions are available at the Planning Division or on the city's web site at https://bakersfieldcity.us/gov/depts/community_development/habitat.htm.

The current MBHCP expires on February 28, 2022. To ensure take of covered species does not occur after the expiration date, fees must be paid no later than August 31, 2021 and all covered activities must be completed by the MBHCP expiration date of February 28, 2022. As determined by the City, only projects ready to be issued an urban development permit, grading plan approval, or building permit will be eligible to pay

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fees under the current MBHCP. Early payment or pre-payment of MBHCP fees shall not be allowed. The ability of the City to issue urban development permits is governed by the terms of the MBHCP. Urban development permits issued after the 2022 expiration date may be subject to a new or revised Habitat Conservation Plan, if approved, or be required to comply directly with requests of the U.S. Fish & Wildlife Service and the California Department of Fish and Wildlife.

b. Burrowing Owl Notification: The burrowing owl is a migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 C.F.R. Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 C.F.R. 21). Sections 3503, 3503.5, and 3800 of the California Fish and Game Code prohibit the taking, possession, or destruction of birds, their nests or eggs. To avoid violation of the provisions of these laws generally requires that project related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1- August 15, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered "taking" and is potentially punishable by fines and/or imprisonment.

c. Prior to ground disturbance, the developer shall have a California Department of Fish and Wildlife approved MBHCP biologist survey the location for kit fox, and comply with the provisions of the Metropolitan Bakersfield Habitat Conservation Plan. Survey protocol shall be recommended by the California Department of Fish and Wildlife. Developer shall be subject to the mitigation measures recommended by the biologist. Copies of the survey shall be provided to the Development Services Department, California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service prior to ground disturbance.

APPLICANT'S RESPONSE:_____

10. A Park Development and Improvement Fee shall be paid at the time of the building permit being issued for each independent residential unit. We will base the fee at the rate in effect at the time the permit is issued.

APPLICANT'S RESPONSE:_____

11. Rooftop areas of commercial buildings (e.g., office, retail, restaurant, assembly, hotel, hospital, church, school), and industrial buildings adjacent to residentially zoned properties, shall be completely screened by parapets or other finished architectural features constructed to a height of the highest equipment, unfinished structural element or unfinished architectural feature of the building.

APPLICANT'S RESPONSE:_____

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12. Open storage of materials and equipment shall be surrounded and screened with a solid wall or fence (screening also applies to gates). This fence shall be at least 6 feet in height and materials shall not be stacked above the height of the fence.

(**Note:** Fences taller than 6 feet are allowed in commercial and industrial zones but they will require a building permit.)

APPLICANT'S RESPONSE:_____

13. Areas used for outside storage shall be treated with a permanent dust binder or other permanent dust control measure consistent with the regulations of the San Joaquin Valley Air Pollution Control District.

(**Note:** All passenger vehicle-parking areas must be paved.)

APPLICANT'S RESPONSE:_____

14. Refuse collection bin enclosures and container areas are subject to all required structural setback from street frontages, and shall not reduce any parking, loading or landscaping areas as required by the Zoning Ordinance.

APPLICANT'S RESPONSE:_____

15. In the event a previously undocumented oil/gas well is uncovered or discovered on the project, the developer is responsible to contact the California Geologic Energy Management Division (CalGEM). The developer is responsible for any remedial operations on the well required by CalGEM. The developer shall also be subject to provisions of BMC Section 15.66.080.B.

APPLICANT'S RESPONSE:_____

16. The developer shall meet all regulations of the San Joaquin Valley Air Pollution Control District (Regulation VIII) concerning dust suppression during construction of the project. Methods include, but are not limited to; use of water or chemical stabilizer/suppressants to control dust emission from disturbed area, stock piles, and access ways; covering or wetting materials that are transported off-site; limit construction-related speed to 15 mph on all unpaved areas/washing of construction vehicles before they enter public streets to minimize carryout/track out; and cease grading and earth moving during periods of high winds (20 mph or more).

APPLICANT'S RESPONSE:_____

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17. Prior to receiving final building or site occupancy, you must contact the Planning Division (staff contact noted above) for final inspection and approval of the landscaping, parking lot, lighting and other related site improvements. Inspections will not be conducted until all required items have been installed. Any deviations from the approved plans without prior approval from the Planning Division may result in reconstruction and delays in obtaining a building or site occupancy.

APPLICANT'S RESPONSE:_____

C. FIRE DEPARTMENT (2101 H Street)
(Staff contact - Ernie Medina; 661-326-3682 or EMedina@bakersfieldcity.us)

1. Show on the final building plans the following items:

   a. All fire hydrants, both offsite (nearest to site) and on-site. *Include flow data on all hydrants.* Hydrants shall be in good working condition and are subject to testing for verification. Fire flow requirements must be met prior to construction commencing on the project site. Please provide two (2) sets of the water plans stamped by a licensed Registered Civil Engineer to the Fire Department and two (2) sets to the Water Resources Department (1000 Buena Vista Road, Bakersfield, CA. 93311; 661-326-3715).

   (**Note:** Show: 1) distance to the nearest hydrant; and 2) distance from that hydrant to the farthest point of the project site.)

   b. All fire sprinkler and/or stand pipe systems, fire alarms and commercial hood systems. These suppression systems require review and permits by the Fire Department. The Fire Department will issue guidelines for these various items as they may apply to this project.

   c. Project address, including suite number if applicable. If the project is within a shopping or business center, note the name and address of the center.

   d. Name and phone number of the appropriate contact person.

   APPLICANT'S RESPONSE:_____

2. The developer must pay required fees to and request an inspection from the Water Resources Department (1000 Buena Vista Road, Bakersfield, CA, phone: 661-326-3715) for any underground sprinkler feeds at least 2 full business days before they are buried. The Prevention Services Division (2101 H Street, Bakersfield CA, Ph. 661/326-3979) must complete all on-site inspections of fire sprinkler systems and fire alarm systems before any building is occupied.

   APPLICANT'S RESPONSE:_____

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3. Where fire apparatus access roads or a water supply for fire protection are required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction.

   APPLICANT'S RESPONSE:_____

4. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved fire apparatus access road* with an asphalt, concrete or other driving surface approved by the fire chief. Must be capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds and shall be surfaced with the first lift of asphalt as to provide all-weather driving capabilities. All access (Permanent and temporary) to and around any building under construction must be a least 20 feet wide (26 feet wide where building height exceeds 30 feet), with an overhead clearance of 13 feet 6 inches, and contain no obstruction. The fire apparatus access road shall extend to within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

   APPLICANT'S RESPONSE:_____

5. Turning Radius: The minimum turning radius shall be thirty-seven feet.

   APPLICANT'S RESPONSE:_____

6. The developer shall submit two (2) sets of plans for permits and approvals from the Fire Department for fuel tanks or related facilities before they are installed on the site. Please contact the Prevention Services Division at 661-326-3979 for further information.

   APPLICANT'S RESPONSE:_____

7. If you handle hazardous materials or hazardous waste on the site, the Prevention Services Division may require a hazardous material management and/or risk management plan before you can begin operations. Please contact them at 661-326-3979 for further information.

   APPLICANT'S RESPONSE:_____

8. If you store hazardous materials on the site in either an underground or a permanent aboveground storage tank, a permit from the Prevention Services Division is required to install and operate these tanks. The Prevention Services Division may also require a Spill Prevention Control and Countermeasure Plan for storage of petroleum products above ground in quantities of 1,320 gallons or more. Please contact them at 661-326-3979 for further information.

   APPLICANT'S RESPONSE:_____

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9. All projects must comply with the current California Fire Code and current City of Bakersfield Municipal Code.

APPLICANT'S RESPONSE:_____

D. WATER RESOURCES (1000 Buena Vista Road)

(Staff contact - Tylor Hester; 661-326-3715 or THester@bakersfieldcity.us)

1. Property is located outside of the City of Bakersfield domestic water service area, therefore, only pipelines and appurtenances related to fire water are subject to review.

APPLICANT'S RESPONSE:_____

2. If the property requires a dedicated fire water service line, Developer shall submit two (2) sets of utility plans signed by a California Registered Civil Engineer to the Water Resources Department showing all offsite and onsite improvements, including connections to the existing water main and underground fire waterlines and related apparatuses. Include any existing nearby on or off-site hydrants on the plans. Plans shall be submitted along with applicable plan check fees and any other associated fees per the current fee schedule. Plans shall comply with current City Standards and Specifications, California Fire Code, and City of Bakersfield Municipal Code. City Standards and Specifications are available for download from the City's website at www.bakersfieldcity.us/gov/depts./water_resources.

APPLICANT'S RESPONSE:_____

3. Developer shall pay the required Water Resources Fire Service Inspection Fees and submit an *Inspection Request Form* for any underground fire waterlines and their apparatuses at least two (2) full business days before permanent construction. The form is available for download from the City's website at www.bakersfieldcity.us/gov/depts/water_resources/fees.htm

APPLICANT'S RESPONSE:_____

E. PUBLIC WORKS - ENGINEERING (1501 Truxtun Avenue)

(Staff contact - Susanna Kormendi; 661-326-3997 or SKormendi@bakersfieldcity.us)

1. The developer shall construct curbs, gutters, cross gutters, sidewalks, and street/alley paving along H Street and Taft Highway according to adopted city standards. These improvements shall be shown on the final building plans submitted to the Building Division before any building permits will be issued.

APPLICANT'S RESPONSE:_____

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2. The developer shall install streetlights along H Street and Taft Highway. The developer shall be responsible for providing the labor and materials necessary to energize all newly installed streetlights before occupancy of the building or site. These improvements shall be shown on the final building plans submitted to the Building Division before any building permits will be issued. Submit street light location plan to Public Works Department for street light number.

   APPLICANT'S RESPONSE:_____

3. The developer shall construct standard accessible ramps at the ☑ northeast ☐northwest ☐southeast ☐southwest corner of H Street and Taft Highway and all access locations according to adopted city standards. These improvements shall be shown on the final building plans submitted to the Building Division before any building permits will be issued.

   APPLICANT'S RESPONSE:_____

4. The developer shall install new connection(s) to the public sewer system. This connection shall be shown on the final building plans submitted to the Building Division before any building permits will be issued.

   APPLICANT'S RESPONSE:_____

5. Show on the final building plans all existing connection(s) to the public sewer system.

   APPLICANT'S RESPONSE:_____

6. All on-site areas required to be paved (i.e. parking lots, access drives, loading areas, etc.) shall consist of concrete, asphaltic concrete (Type B. A. C.) or other paved street material approved by the City Engineer. Pavement shall be a minimum thickness of 2 inches over 3 inches of approved base material (i.e. Class II A. B.) if concrete is used, it shall be a minimum thickness of 4 inches per Municipal Code Section 17.58.060.A. This paving standard shall be noted on the final building plans submitted to the Building Division before any building permits will be issued.

   APPLICANT'S RESPONSE:_____

7. If a grading plan is required by the Building Division, building permits will not be issued until the grading plan is approved by **both** the Public Works Department and the Building Division.

   APPLICANT'S RESPONSE:_____

8. All storm water generated on the project site, including the street frontage shall be retained onsite unless otherwise allowed by the Public Works Department (please contact the Public Works Department – Subdivisions at 661-326-3576).

   APPLICANT'S RESPONSE:_____

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9. If the project generates industrial waste, it shall be subject to the requirements of the Industrial Waste Ordinance. An industrial waste permit must be obtained from the Public Works Department before issuance of the building permit. To find out what type of waste is considered industrial, please contact the Wastewater Treatment Superintendent at 661-326-3249.

APPLICANT'S RESPONSE:_____

10. Before any building or site can be occupied, the developer must reconstruct or repair substandard off-site street improvements that front the site to adopted city standards as directed by the City Engineer. Please call the Construction Superintendent at 661-326-3049 to schedule a site inspection to find out what improvements may be required prior to submitting a grading plan. Any off-site/frontage improvements or repairs required during the site inspection shall be shown on the grading plan.

APPLICANT'S RESPONSE:_____

11. A street permit from the Public Works Department shall be obtained before any work can be done within the public right-of-way (streets, alleys, easements). Please include a copy of this site plan review decision to the department at the time you apply for this permit.

APPLICANT'S RESPONSE:_____

12. A sewer connection fee shall be paid at the time a building permit is issued. We will base this fee at the rate in effect at the time a building permit is issued.

APPLICANT'S RESPONSE:_____

13. If the project is subject to the provisions of the National Pollutant Discharge Elimination System (NPDES), a "Notice of Intent" (NOI) to comply with the terms of the General Permit to Discharge Storm Water Associated with Construction Activity (SWRCB Order No. 2009-009-DWQ as amended by Order No. 2010-0014-DWQ and 2012-0006-DWQ) must be filed with the State Water Resources Control Board in Sacramento before the beginning of any construction activity. Compliance with the general permit required that a Storm Water Pollution Prevention Plan (SWPPP) be prepared, continuously carried out, and always be available for public inspection during normal construction hours.

APPLICANT'S RESPONSE:_____

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14. Prior to the issuance of each building permit, or if no building permit is required, the first required City approval prior to construction, the developer/owner shall pay a Transportation Impact Fee (TIF) for regional facilities. This fee will be based on the rate in effect at the time the applicable approval is issued or in accordance with the Subdivision Map Act, as applicable. The Public Works Department will calculate an estimate of the total fee upon submittal of construction plans for the project.

APPLICANT'S RESPONSE:_____

15. The developer shall either construct the equivalent full width landscaped median island in H Street and Taft Highway along the development's frontage or pay their proportionate share (1/2-width) of the total cost for the future construction of the median. Median islands shall be designed by the first development that occurs along an applicable street frontage. That developer shall either construct the full width landscaped median island or pay the median island fee. The median island fee shall be satisfied by fulfilling one of the following options: (1) Pay the standard fee of $100 per linear foot; or (2) Pay the calculated fee based upon actual cost estimates prepared by the Project Engineer, which shall be reviewed and approved by the City Engineer. If the median island is not constructed by the first development along an applicable street frontage, the second development along that street frontage shall construct the full width landscaped median island.

APPLICANT'S RESPONSE:_____

16. The developer shall form a new Maintenance District. Undeveloped parcels within an existing Maintenance District are required to update Maintenance District documents. Updated documents, including Proposition 218 Ballot and Covenant, shall be signed and notarized. If there are questions, contact Alerik Hoeh at 661-326-3576.

(**Note:** If already within a maintenance district, may need to update the maintenance district form.)

APPLICANT'S RESPONSE:_____

17. The developer shall install a full sized manhole in each sewer line except residential development before it connects to the sewer main. This manhole is to be located within the property being developed and must be easily accessible by City workers.

APPLICANT'S RESPONSE:_____

18. This project may be located within a Planned Sewer Area. Please contact the Public Works Department – Subdivisions at 661-326-3576 to determine what fees may apply.

APPLICANT'S RESPONSE:_____

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19. This project may be located within a Planned Drainage Area. Please contact the Public Works Department – Subdivisions at 661-326-3576 to determine what fees may apply.

APPLICANT'S RESPONSE:_____

20. This project may be subject to Bridge and Major Thoroughfare fees. Please contact the Public Works Department – Subdivisions at 661-326-3576 to determine what fees may apply.

APPLICANT'S RESPONSE:_____

21. Project will require approval for any work within the canal right of way from the Kern Delta Water District.

APPLICANT'S RESPONSE:_____

F. <u>PUBLIC WORKS - TRAFFIC (1501 Truxtun Avenue)</u>

(Staff contact - Susanna Kormendi; 661-326-3997 or SKormendi@bakersfieldcity.us)

1. Street return type approaches, if used, shall have 20-foot minimum radius returns. All dimensions shall be shown on the final building plans.

APPLICANT'S RESPONSE:_____

2. Two-way drive aisles shall be a minimum width of 24 feet. If perpendicular (90º) parking spaces are proposed where a vehicle must back into these aisles, the minimum aisle width shall be 25 feet. All drive aisle dimension shall be shown on the final building plans.

APPLICANT'S RESPONSE:_____

3. Show the typical parking stall dimension on the final building plans (minimum stall size is 9 feet x 18 feet and shall be designed according to standards established by the Traffic Engineer).

APPLICANT'S RESPONSE:_____

4. The Bakersfield Municipal Code (Section 17.58.050.K.) prohibits vehicles from backing out of a parking space into a street. Please revise the parking design on the final building plans to eliminate these spaces.

(**Note:** This prohibition does not include single-family homes in residential zones, or multiple family units on local streets where the Traffic Engineer has determined that backing onto a street will not adversely affect traffic and is similar to a single family residential driveway use.)

APPLICANT'S RESPONSE:_____

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5. Walls, fences, or trash enclosures within 10 feet of a sidewalk at an alley or driveway shall not exceed 3 feet in height above the curb flow line. You must either revise the circulation design or show on the final building plans that the maximum fence/wall height will not exceed three feet.

APPLICANT'S RESPONSE:_____

6. The developer shall dedicate additional road right-of-way to the City of Bakersfield along Taft Highway and South H Street to full ☑ arterial ☐ collector ☐ local street width according to adopted city standards with the grading plan submittal.

(**Note:** The centerline of South H Street is planned to be shifted to the west approximately 23 feet.)

(**Note:** Right turn deceleration lane is required for any entrance from South H Street or Taft Highway.)

APPLICANT'S RESPONSE:_____

7. The developer shall construct additional roadway, including expanded intersection and/or right turn lanes, along Taft Highway and South H Street to full ☑ arterial ☐ collector ☐ local street width according to adopted city standards.

APPLICANT'S RESPONSE:_____

8. The developer shall dedicate any sidewalk extending out of the right of way to the City of Bakersfield for the pedestrian way along all arterial streets. This must be conducted with a separate instrument or final map.

APPLICANT'S RESPONSE:_____

G. PUBLIC WORKS - SOLID WASTE (4101 Truxtun Avenue)
(Staff Contact - Jesus Carrera; 661-326-3114 or jcarrera@bakersfieldcity.us)

1. You must contact the staff person noted above before building permits can be issued or work begins on the property to establish the level and type of service necessary for the collection of refuse and/or recycled materials. Collection locations must provide enough containment area for the refuse that is generated without violating required zoning or setback restrictions (see Planning Division conditions). Levels of service are based on how often collection occurs as follows:

☐	Cart service	--	1 cubic yard/week or less 1 time per week
☑	Front loader bin services	--	1 cubic yard/week - 12 cubic yards/day
☐	Roll-off compactor service	--	More than 12 cubic yards/day

APPLICANT'S RESPONSE:_____

2. Show on the final building plans refuse/recycle bin enclosures. Each enclosure shall be designed according to adopted city standard (Detail # ST-27 and ST-28), at the size checked below ☑. Before occupancy of the building or site is allowed, 4, 3-cubic yard front loading type refuse/recycle bin(s) shall be placed within the required enclosure(s).

☐ 6' deep x 8' wide (1 bin) ☐ 8' deep x 15' wide (3 bins)
☐ 8' deep x 10' wide (2 bins) ☑ 1 - 8' deep x 20' wide (4 bins)
☐ 8' deep x 10' wide; on skids for direct stab only (1-6 yard recycling bin)

(**Note:** All measurements above are curb-to-curb dimensions inside the enclosure. If both refuse and recycling containers are to be combined in the same enclosure area, this area must be expanded in size to accommodate multiple containers/bins - contact the staff person above for the appropriate enclosure size.)

APPLICANT'S RESPONSE:_____

3. Examples of enclosure styles can be found on (Detail # ST-32).

APPLICANT'S RESPONSE:_____

4. Facilities that require grease containment must provide a storage location that is separate from the refuse bin location. This shall be shown on the final building plans. If a grease interceptor is to be used instead of a grease containment bin, the plans must still show the location of an adequately sized enclosure should a grease containment bin be required at a future date. The grease containment bin shall not share the same enclosure as the refuse/recyclable/organic bin enclosure.

APPLICANT'S RESPONSE:_____

5. Facilities with existing refuse service must improve the service location area(s) according to adopted City standards (Detail # ST-27 and ST-28). These improvements shall be clearly shown on the final building plans.

APPLICANT'S RESPONSE:_____

6. If utilities are incorporated into the enclosure design, they shall not interfere with space provided for refuse bins and must provide sufficient protection measures to guard the utilities from damage.

APPLICANT'S RESPONSE:_____

DRAFT

7. Enclosures shall not be located in an area that would cause refuse trucks to interfere with drive thru traffic flow entering or exiting the site, drive thru lanes, etc.

   APPLICANT'S RESPONSE:_____

8. Businesses are required to have sufficient capacity of refuse/recycling/organic material storage to go without service for 1 day (Sunday). At any time refuse/recycling/organic services become an issue, businesses shall construct a second refuse enclosure to meet the demand. The second enclosure shall be approved by the City prior to construction.

   APPLICANT'S RESPONSE:_____

DRAFT

COVER SHEET

PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020	**ITEM NUMBER:** Consent Calendar Public Hearings5.(c.)

TO: Planning Commission

FROM: Paul Johnson, Planning Director

PLANNER:

DATE:

WARD: Ward(s) 1, 2, 3, 4, 5, 6, 7

SUBJECT:
Text Amendments to Title 17 of the Bakersfield Municipal Code by amending Section 17.61.020 related to approved landscape plan requirements. Notice of Exemption on file.

APPLICANT:

OWNER:

LOCATION: City-wide

STAFF RECOMMENDATION:
Adopt Resolution approving ordinance amendments and recommend same to the City Council.

ATTACHMENTS:

	Description	Type
🗋	Staff Report	Staff Report
🗋	Resolution	Resolution
🗋	Draft Ordinance	Backup Material

BAKERSFIELD
THE SOUND OF Something Better

CITY OF BAKERSFIELD
PLANNING DEPARTMENT
STAFF REPORT

TO: Chair Koman and Members of the Planning Commission AGENDA ITEM: 5.c

FROM: Paul Johnson, Planning Director APPROVED: PJ

DATE: June 18, 2020

SUBJECT: **TEXT AMENDMENTS TO TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE BY AMENDING SECTION 17.61.020 RELATED TO APPROVED LANDSCAPE PLAN REQUIREMENTS (ALL WARDS)**

RECOMMENDATION:

Adopt Resolution **APPROVING** the ordinance amendment and recommend same to the City Council.

BACKGROUND:

This item is in response to a referral from Councilman Freeman at the February 19, 2020 City Council meeting for staff to develop a policy that provides specific guidance to developers on landscaping in commercial parking lots when there are changes to an approved landscape plan.

At the May 21, 2020 Planning and Development Committee meeting, staff provided a presentation on parking lot landscape standards and recommended amendments to Title 17 of the Bakersfield Municipal Code (Zoning Ordinance). Staff was directed to draft the proposed amendments.

Landscape Standards - General

In May 1998, City Council adopted Chapter 17.61, *Landscape Standards*. Although the standards have been revised over the years, the stated purpose in establishing criteria, standards, and limits for landscaping is to provide a transition between and mitigate conflicts which may arise between adjacent land uses, to promote an attractive visual harmony between the landscape and development, reduce air, noise and visual pollution, produce a healthy, vibrant, sustainable urban forest, decrease temperatures, increase comfort, and promote commerce and socialization, while promoting water use efficiency.

Landscape Standards - New Projects

New multi-family, commercial, and industrial development projects are subject to the site plan approval process. This process allows City staff to review projects to ensure development is constructed in accordance with city ordinances and standards. As part of the submittal, a landscape plan shall be included which demonstrates the project complies with the requirements set out in the Zoning Ordinance or Specific Plan for the project area.

Landscape Standards - Improvements to Existing Projects

All projects for which site plan approval is required shall install and maintain landscaping in accordance with the landscape ordinance. However, the requirement shall not apply to projects where a current use is expanded and the valuation of the building permit is less than 50% of the replacement value of the existing improvements. If the existing uses are to be expanded greater than 50% of their replacement value, the Planning Director shall determine the amount and placement of landscaping needed.

Landscape Standards - Tree Preservation and Protection

Trees voluntarily removed from an existing project, except when necessary for the protection of public safety, property damage, etc., shall be replaced within 120 days of removal. Replacement must conform to the original intent of the landscape design and adhere to the state's Model Water Efficient Landscape Ordinance (MWELO) to comply with mandating the Governor's Executive Order for a 25% reduction in water use. Additionally, trees shall be replaced at the average size of what is or was existing not to exceed a 48-inch box container size. Failure to replace existing trees shall be subject to the issuance of notices of violations, correction orders, citations, and any administrative remedies provided under the Municipal Code or applicable state law.

Landscape Alterations

When existing landscaping on commercial sites is altered, it is typically for the following reasons: (a) accommodate improvements, for example ADA compliance, carports or other similar structures; (b) resurface and reconfigure parking lot spaces; (c) upgrade landscaping with new lush trees; (d) downgrade landscaping with new drought resistant trees; and (e) willful removal of landscaping for various reasons.

Within parking lots, the ordinance requires trees to be planted at a minimum ratio of 1 tree for each 6 parking spaces, but shall be sufficient to attain shading over 40% of the total area of all uncovered parking stalls, loading areas, drive aisles, and maneuvering areas. When landscape alterations are proposed, staff evaluates the plans to ensure they do not conflict with ordinance requirements (e.g., property setbacks, parking calculations, height requirements, etc.). Although landscaping is considered in the review, there is no requirement to submit a new landscape plan.

RECOMMENDED ORDINANCE UPDATES

In response to the Council direction, staff prepared the attached draft text amendments. The Ordinances amendments would require the approved commercial landscape plans be revised if the landscape/irrigation is substantially modified. Substantial modification means a change in the character or quantity of the plant material or irrigation that equals or exceeds 100 square feet of landscape area. To provide specific guidance, the revised landscape plan would require the following (see Ordinance changes for complete list of changes):

- Preparation by a landscape design professional
- Description of the new landscaping and how it complies with the ordinance
- Detailed summary of landscaping removed
- Location of where replacement landscaping will be placed on site
- Shade calculations confirming attainment of shading requirements
- Identification of any existing missing/underperforming landscaping on site
- Trees removed as part of a revised landscape plan shall be replaced on a 1-to-1 basis, with few exceptions

ENVIRONMENTAL REVIEW AND DETERMINATION:

This project has been found to be exempt from the provisions of the California Environmental Quality Act (CEQA] and the City of Bakersfield's CEQA Implementation Procedures. Under CEQA Section 15306 (*Information Collection*) Class 6 projects consist of basic data collection, research, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded.

PUBLIC NOTIFICATION:

Notice of public hearing before the Planning Commission of the City of Bakersfield for the project was advertised in the newspaper and posted on the bulletin board of the Bakersfield City Development Services/Planning Division. As of this writing, no written comments have been received.

CONCLUSION:

Based on the foregoing, staff concludes the recommended ordinance amendments to Title 17 of the Bakersfield Municipal Code within Section 17.61.020 are appropriate.

ATTACHMENTS:

A: Draft Resolution

RESOLUTION NO. _____

RESOLUTION OF THE BAKERSFIELD PLANNING COMMISSION RECOMMENDING THAT THE CITY COUNCIL APPROVE TEXT AMENDMENTS TO TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE BY AMENDING SECTION 17.61.020 RELATED TO APPROVED LANDSCAPE PLAN REQUIREMENTS.

WHEREAS, the City of Bakersfield initiated text amendments to Title 17 of the Bakersfield Municipal Code by amending Section 17.61.020 relating to approved landscape plan requirements (the Project); and

WHEREAS, the Secretary of the Planning Commission, did set Thursday, June 18, 2020, at 5:30 p.m. in the Council Chambers, City Hall South, 1501 Truxtun Avenue, Bakersfield, California, as the time and place for consideration; and

WHEREAS, the Project has been found to be exempt from the requirements of the California Environmental Quality Act (CEQA) in accordance with CEQA Section 15306 (Information Collection) which consists of basic data collection, research, and resource evaluation activities that does not result in a serious or major disturbance to an environmental resource (e.g., information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded); and

WHEREAS, the laws and regulations relating to CEQA and the City of Bakersfield's CEQA Implementation Procedures have been duly followed by city staff and the Planning Commission; and

WHEREAS, the City of Bakersfield Planning Division (1715 Chester Avenue, Bakersfield, California) is the custodian of all documents and other materials upon which the environmental determination is based; and

WHEREAS, the facts presented in the staff report and evidence received at the above referenced public hearing support the following findings:

1. All required public notices have been given. Advertisement of the hearing notice regarding the Project was published in the *Bakersfield Californian*, a local newspaper of general circulation.

2. The provisions of the California Environmental Quality Act (CEQA) have been followed.

3. Pursuant to State CEQA Guidelines Section 15306, this request is exempt from the requirements of CEQA because it is for information collection.

4. The text amendments are necessary and desirable as the proper use of the City's zoning authority for the protection of the general health, safety, welfare of the community.

5. The text amendments are consistent with the goals, objectives and policies of the Metropolitan Bakersfield General Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF BAKERSFIELD as follows:

1. The recitals above are true and correct and incorporated herein by this reference.

2. The ordinance amendments as shown in Exhibit A and incorporated herein, is hereby recommended for adoption by the City Council.

---------o0o---------

I HEREBY CERTIFY that the foregoing resolution was passed and adopted by the Planning Commission of the City of Bakersfield at a regular meeting thereof held on the 18th day of June 2020, on a motion by Commissioner _____ and seconded by Commissioner _____, by the following vote.

AYES:

NOES:

ABSENT:

APPROVED

_____
LARRY KOMAN, CHAIR
City of Bakersfield Planning Commission

Exhibits:
Draft Ordinance

REDLINE

ORDINANCE NO. _____

ORDINANCE AMENDING TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE BY AMENDING SECTION 17.61.020 RELATED TO APPROVED LANDSCAPE PLAN REQUIREMENTS.

BE IT ORDAINED by the Council of the City of Bakersfield as follows:

SECTION 1.

Section 17.61.020 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.61.020 Landscaping Required.

A. All projects for which site plan approval is required shall install and maintain landscaping in accordance with the requirements of this chapter; provided, however, these landscape requirements shall not apply to projects where a current use is expanded and the valuation of the building permit is less than fifty percent of the replacement value of the existing improvements. If the existing uses are to be expanded greater than fifty percent of their replacement value, the planning director**, or designee,** shall determine the amount and placement of landscaping needed to comply with this section.

B. Occupancy of a use subject to these standards shall not be permitted until the approved landscaping and irrigation has been installed, or if permitted by the planning director, an agreement and/or surety bond or cash deposit sufficient to cover the cost of installation, which amount has been determined to complete the work plus administration costs by the city, and such has been provided to the city specifying completion of installation within a time specified by the planning director.

C. An approved landscape plan for commercial improvement projects must be revised if the landscape/irrigation is substantially modified. Substantial modification in this section means a change in the character or quantity of the plant material or irrigation that equals or exceeds one hundred square feet of landscape area.

1. A revised landscape plan under this section shall be prepared by a landscape design professional and include all of the following:

a. A description of the new landscaping and how it complies with the ordinance;

b. A detailed summary of landscaping removed;

c. The location of where replacement landscaping will be placed on site;

d. Shade calculations confirming attainment of shading requirements; and

e. Identification of any existing missing or underperforming landscaping on site.

2. Trees removed as part of a revised landscape plan shall be replaced on a 1-to-1 basis unless:

a. It would be detrimental to the public health, safety, or welfare or to property or residents in the area; or

b. Special physical circumstances exist limiting additional landscaping of a particular property.

3. No building permit(s) shall be issued or installation of landscaping shall occur, prior to approval of the revised landscape plan by the planning director or designee. All landscaping shall be installed per the approved plans within 120 days of submittal of the revised landscape plan or as otherwise approved by the planning director or designee.

SECTION 2.

This Ordinance shall be posted in accordance with the provisions of the Bakersfield Municipal Code and shall become effective thirty (30) days from and after the date of its passage.

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I HEREBY CERTIFY that the foregoing Ordinance was passed and adopted, by the Council of the City of Bakersfield at a regular meeting thereof held on _____ by the following vote:

AYES:	COUNCILMEMBER:	RIVERA, GONZALES, WEIR, SMITH, FREEMAN, SULLIVAN, PARLIER
NOES:	COUNCILMEMBER:	_____
ABSTAIN:	COUNCILMEMBER:	_____
ABSENT:	COUNCILMEMBER:	_____

_____
JULIE DRIMAKIS, CMC
CITY CLERK and Ex Officio Clerk of the Council of the City of Bakersfield

APPROVED:

By: _____
KAREN GOH
Mayor

APPROVED AS TO FORM:
VIRGINIA GENNARO
City Attorney

By: _____
VIRIDIANA GALLARDO-KING
Deputy City Attorney

VKG/vlg
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COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020 **ITEM NUMBER:** 5.(d.)

TO: Planning Commission

FROM: Paul Johnson, Planning Director

PLANNER:

DATE:

WARD: Ward(s) 1, 2, 3, 4, 5, 6, 7

SUBJECT:
Text Amendments to Title 17 of the Bakersfield Municipal Code by adding Sections 17.10.025, 17.14.025, and 17.16.025; and amending Sections 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, and 17.30.020, related to a Determination of Uses not listed in the Zoning Ordinance. Notice of Exemption on file.

APPLICANT:

OWNER:

LOCATION: City-wide

STAFF RECOMMENDATION:
Adopt Resolution approving ordinance amendments and recommend same to the City Council.

ATTACHMENTS:

Description	Type
Staff Report	Staff Report
Resolution	Resolution
Draft Ordinance	Backup Material

BAKERSFIELD
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CITY OF BAKERSFIELD
PLANNING DEPARTMENT
STAFF REPORT

TO: Chair Koman and Members of the Planning Commission AGENDA ITEM: 5.d

FROM: Paul Johnson, Planning Director APPROVED: PJ

DATE: June 18, 2020

SUBJECT: **TEXT AMENDMENTS TO TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE BY ADDING SECTIONS 17.10.025, 17.14.025, AND 17.16.025; AND AMENDING SECTIONS 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, AND 17.30.020 RELATED TO A DETERMINATION OF USES NOT LISTED IN THE ZONING ORDINANCE (ALL WARDS)**

RECOMMENDATION:

Adopt Resolution **APPROVING** the ordinance amendment and recommend same to the City Council.

BACKGROUND:

This item is in response to a referral from Councilman Freeman at the April 10, 2019 City Council meeting for staff to examine ways to improve the conditional use permit (CUP) process.

At the August 13, 2019 and October 8, 2019 Planning and Development Committee meetings, staff provided presentations on improving the CUP process. The presentations included background information on the Bakersfield Municipal Code as it relates to land use entitlements, the authority of the Board of Zoning Adjustment to issue CUPs for certain listed uses, allowing CUP applications for any use in any zone, addressing unlisted uses, common uses that should be incorporated, and recommended amendments to Title 17 of the Bakersfield Municipal Code (Zoning Ordinance). Staff was directed to draft the proposed amendments.

Land Use Entitlements

The City of Bakersfield addresses land use entitlements within Title 17. The purpose of the Zoning Ordinance is to implement the goals and policies of the General Plan, which serve to promote and protect the public health, safety, peace, morals, comfort, convenience and general welfare.

As with most Zoning Ordinances throughout the Country, the City Ordinance is structured with two key features:

1. **Permissive Zoning** - The Ordinance is a permissive zoning code that identifies the specific land uses that are "permitted" or "conditionally permitted" in each zone of City (§17.06.040).

2. **Pyramid Structure** - In many cases, each zone district contains language which permits all of the listed uses in a more restricted zone to occur in a less restricted zone. For example, any permitted use in the C-1 (Neighborhood Commercial) zone is also a permitted use in the C-2 (Regional Commercial) zone.

Board of Zoning Adjustment and Conditional Use Permits

As a part of the permissive zoning structure, the Zoning Ordinance contains language which grants discretionary authority to the Board of Zoning Adjustment (BZA) to issue conditional use permits (CUP) for certain listed uses. The BZA may approve or deny a CUP thereby permitting any use in any zone in which that use is not permitted by Title 17, subject to the following two findings:

1. The proposed use is deemed essential or desirable to the public convenience or welfare; and

2. The proposed use is in harmony with the various elements and objectives of the general plan and applicable specific plans (§17.64.020.B).

Put simply, this language allows the BZA to consider CUP applications for: (1) a use that is listed as subject to a CUP; or (2) a use that is not listed anywhere in the Zoning Ordinance. This means that if a use specifically requires a CUP in a particular zone, then the use can only be granted via CUP in the specified zone, and not in any other zone.

For example, "sewage treatment plants" are only listed as a use in the M-3 zone, and require a CUP. Therefore, construction of a sewage treatment plant can ONLY be allowed in the M-3 zone upon approval of a CUP, and not in any other zone. Should a property owner with an R-1 zoned property wish to construct a sewer treatment plant, they would need to obtain approval of a zone change to the M-3 zone and a CUP.

Conditional Use Permit Applications for Any Use in Any Zone

In the recent past, Section 17.64.020.B has been interpreted to allow applicants to apply for a CUP for simply "any use in any zone." This has resulted in requests for CUPs to allow industrial uses in commercial zones, commercial uses in residential zones, etc. Under this logic, one could simply request to build a sewer treatment plant in a residential zone with a CUP and without obtaining the appropriate zoning.

Staff has concerns that this approach could result in the construction of uses which are fundamentally incompatible with one another.

Un-Listed Uses

It is impossible for the City to define and list all possible land use in existence, as there are new uses that have not yet been contemplated. When a new use is defined, there are two methods by which to address:

- **Add New Use to Municipal Code** - When a new use is defined and it is clear that use is not similar to anything else already listed, City Council can make a referral to staff to study the use and determine if it should be added to the Zoning Ordinance as a "permitted" or "conditionally permitted" use. This research is typically presented to the Planning & Development Council Committee, then an Ordinance amendment is presented to the Planning Commission followed by presentation to City Council.

- **Additional Permitted Uses** - Some land uses are not specifically listed in the Zoning Ordinance, but may be similar to a listed use. For example, "archery ranges" are a permitted use in certain zones; however, "ax throwing" is not listed anywhere in the Ordinance. It is reasonable to conclude that "ax throwing" is similar to "archery ranges" therefore, Section 17.08.040 allows for this process to occur as follows:

  ***17.08.040. Additional Permitted Uses**. Uses other than those specifically mentioned in Title 17 as uses permitted in each of the zones may be permitted therein, provided such uses are similar to those mentioned and are, in the opinion of the Planning Commission and City Council, as evidenced by a resolution in writing, not more obnoxious or detrimental to the welfare of the community than the permitted uses specifically mentioned in the respective zones.*

  This process requires that an applicant present an application to staff, who then would take it before the Planning Commission and City Council for approval via a Resolution. This approach would authorize the use one time on the specific site where a "similar" use is listed, and does not change the Zoning Ordinance.

  The American Planning Association (APA) supports the approach of making a determination of similar use. The APA defines similar use as:

  "A use that has the same characteristics as the specifically cited uses in terms of the following: trip generation and type of traffic, parking and circulation, utility demands, environmental impacts, physical space needs, and clientele."

Common Uses to Add

Staff was also directed to evaluate the last 5 years of CUPs to determine whether specific uses need to be included in the list of "permitted" or "conditionally permitted" in each zone of City. This was accomplished and a list of uses are proposed.

RECOMMENDED ORDINANCE UPDATES

In response to the Council direction, staff prepared the attached draft text amendments to change the name of the process to something more clear (Determination of Use) and clarifies the types of findings that should be made. For projects where a determination of use is required, both the determination of use and the proposed CUP will be heard as one project by the Planning Commission and City Council.

Additionally, specific uses are added to the list of "permitted" or "conditionally permitted" in various zone districts.

ENVIRONMENTAL REVIEW AND DETERMINATION:

This project has been found to be exempt from the provisions of the California Environmental Quality Act (CEQA] and the City of Bakersfield's CEQA Implementation Procedures. Under CEQA Section 15306 (*Information Collection*) Class 6 projects consist of basic data collection, research, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded.

PUBLIC NOTIFICATION:

Notice of public hearing before the Planning Commission of the City of Bakersfield for the project was advertised in the newspaper and posted on the bulletin board of the Bakersfield City Development Services/Planning Division. As of this writing, no written comments have been received.

CONCLUSION:

Based on the foregoing, staff concludes the recommended ordinance amendments to Title 17 of the Bakersfield Municipal Code within Sections 17.10.025, 17.14.025, 17.16.025, 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, and 17.30.020, are appropriate.

ATTACHMENTS:

A: Draft Resolution

RESOLUTION NO. _____

RESOLUTION OF THE BAKERSFIELD PLANNING COMMISSION RECOMMENDING THAT THE CITY COUNCIL APPROVE TEXT AMENDMENTS TO TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE BY ADDING SECTIONS 17.10.025, 17.14.025, AND 17.16.025; AND AMENDING SECTIONS 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, AND 17.30.020 RELATED TO A DETERMINATION OF USES NOT LISTED IN THE ZONING ORDINANCE.

WHEREAS, the City of Bakersfield initiated text amendments to Title 17 of the Bakersfield Municipal Code by adding Sections 17.10.025, 17.14.025, and 17.16.025; and amending Sections 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, and 17.30.020 relating to a Determination of Uses not listed in the Zoning Ordinance (the Project); and

WHEREAS, the Secretary of the Planning Commission, did set Thursday, June 18, 2020, at 5:30 p.m. in the Council Chambers, City Hall South, 1501 Truxtun Avenue, Bakersfield, California, as the time and place for consideration; and

WHEREAS, the Project has been found to be exempt from the requirements of the California Environmental Quality Act (CEQA) in accordance with CEQA Section 15306 (Information Collection) which consists of basic data collection, research, and resource evaluation activities that does not result in a serious or major disturbance to an environmental resource (e.g., information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded); and

WHEREAS, the laws and regulations relating to CEQA and the City of Bakersfield's CEQA Implementation Procedures have been duly followed by city staff and the Planning Commission; and

WHEREAS, the City of Bakersfield Planning Division (1715 Chester Avenue, Bakersfield, California) is the custodian of all documents and other materials upon which the environmental determination is based; and

WHEREAS, the facts presented in the staff report and evidence received at the above referenced public hearing support the following findings:

1. All required public notices have been given. Advertisement of the hearing notice regarding the Project was published in the *Bakersfield Californian*, a local newspaper of general circulation.

2. The provisions of the California Environmental Quality Act (CEQA) have been followed.

3. Pursuant to State CEQA Guidelines Section 15306, this request is exempt from the requirements of CEQA because it is for information collection.

4. The text amendments are necessary and desirable as the proper use of the City's zoning authority for the protection of the general health, safety, welfare of the community.

5. The text amendments are consistent with the goals, objectives and policies of the Metropolitan Bakersfield General Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE PLANNING COMMISSION OF THE CITY OF BAKERSFIELD as follows:

1. The recitals above are true and correct and incorporated herein by this reference.

2. The ordinance amendments as shown in Exhibit A and incorporated herein, is hereby recommended for adoption by the City Council.

---------o0o---------

I HEREBY CERTIFY that the foregoing resolution was passed and adopted by the Planning Commission of the City of Bakersfield at a regular meeting thereof held on the 18th day of June 2020, on a motion by Commissioner _____ and seconded by Commissioner _____, by the following vote.

AYES:

NOES:

ABSENT:

APPROVED

_____
LARRY KOMAN, CHAIR
City of Bakersfield Planning Commission

Exhibits:
Draft Ordinance

ORDINANCE NO. _____

ORDINANCE AMENDING TITLE 17 OF THE BAKERSFIELD MUNICIPAL CODE BY ADDING SECTIONS 17.10.025, 17.14.025, AND 17.16.025; AND AMENDING SECTIONS 17.08.040, 17.08.050, 17.18.025, 17.20.040, 17.22.040, 17.24.040, 17.25.040, 17.26.040, 17.28.020, 17.28.030, AND 17.30.020 RELATED TO A DETERMINATION OF USES NOT LISTED IN THE ZONING ORDINANCE.

BE IT ORDAINED by the Council of the City of Bakersfield as follows:

SECTION 1.

Section 17.08.040 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.08.040. ~~Additional Permitted Uses~~ Determination of Use.

A. Uses **permitted** other than those specifically mentioned in this title as**: (a)** uses permitted ~~in each of the zones,~~**; (b) uses permitted subject to a director review and approval; or (c) uses permitted subject to the approval of a conditional use permit, in each of the zone districts** may be permitted therein~~,~~ ~~provided such uses are similar to those mentioned and are, in the opinion of the planning commission and city council, as evidenced by a resolution in writing, not more obnoxious or detrimental to the welfare of the community than the permitted uses specifically mentioned in the respective zones~~ **subject to the approval of a Determination of Use.**

B. Determination of Use in this section refers to establishing whether a use that is not included in the applicable Zone District use schedule and is not reasonably similar to uses identified within the applicable use schedule can be allowed nonetheless. In such cases, an applicant shall submit an application for Determination of Use to the Planning Department for processing, which will be referred to the Planning Commission for review and approval.

C. The applicant shall submit a completed application form, a completed operational statement, pay a fee as determined by the Council, and such information necessary to discern the exact nature and extent of the requested use as may be required by the Planning Director.

D. The Planning Department shall schedule the request for Determination of Use to the next available regular meeting of the Planning Commission for public hearing.

E. The decision on the Determination of Use shall provide the applicant with a written explanation, that includes, at a minimum;

1. A definition of the proposed use, which may include edit of or insertion into previously existing definitions, and;

2. A classification of the use within the use schedule of the Zoning Ordinance for all applicable Zone Districts; and

3. The classification of the use which can be determined to be a prohibited use, a permitted use, a permitted use subject to a director's review and approval, and/or a permitted use subject to the approval of a conditional use permit; and

4. In all cases where a use is permitted to be established, the Planning Commission must make the findings that the Determination of Use is:

a. Consistent with the purpose and intent of the zone district(s) and underlying General Plan land use designation(s) as assigned, and;

b. Not more detrimental to the public peace, health, safety or welfare of the community than the permitted or conditionally permitted uses specifically mentioned for the respective zone(s), and;

c. Similar to and compatible with other uses allowed or conditionally allowed in the designated zone district(s).

F. The Determination of Use may require:

1. Additional entitlements be approved prior to the establishment of the use; and/or

2. Operational limits to the use; and/or

3. Development requirements to the use as a component of those entitlements.

G. The Planning Director shall cause a list of such determinations and entitlements to be maintained and shall periodically initiate an amendment to the Zoning Ordinance to incorporate such changes into the Zoning Ordinance.

H. Determination of Use shall be processed in accordance with public hearing procedures established by Section 17.64.050 and be subject to the findings required by Subsection 17.08.040(E)(4).

I. The decision of the Planning Commission may be appealed to the City Council consistent with Section 17.064.090.

SECTION 2.

Section 17.08.050 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.08.050. Prohibited Uses.

A. The following uses are specifically prohibited within any zone district:

1. Medical marijuana dispensary.

2. Commercial cannabis activity.

B. Other uses may also be prohibited, provided such uses are, in the opinion of the Planning Commission, more detrimental to the public peace, health, safety or welfare of the community than the uses specifically mentioned for respective zone(s).

SECTION 3.

Section 17.10.025 of the Bakersfield Municipal Code is hereby enacted to read as follows:

17.10.025 Uses permitted only by conditional use permit.

A. The following uses are permitted in an R-1 zone only with the approval of a conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this title.

1. Roominghouse.

SECTION 4.

Section 17.14.025 of the Bakersfield Municipal Code is hereby enacted to read as follows:

17.14.025 Uses permitted only by conditional use permit.

A. The following uses are permitted in an R-2 zone only with the approval of a conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this title.

1. Roominghouse.

SECTION 5.

Section 17.16.025 of the Bakersfield Municipal Code is hereby enacted to read as follows:

17.16.025 Uses permitted only by conditional use permit.

A. The following uses are permitted in an R-3 zone only with the approval of a conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this title.

1. Roominghouse.

SECTION 5.

Section 17.18.025 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.18.025 Uses permitted only by conditional use permit

A. ~~While any use may be permitted by conditional use permit pursuant to subsection B of Section 17.64.020,~~ t**T**he following uses are ~~not~~ permitted **in an R-4 zone only with the approval of a** ~~in the R-4 zone except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this title:

~~A~~**1**. Certified farmers markets;

~~B~~**2**. Food and/or shelter service ~~agencies~~ as defined in Section 17.04.285;

~~C~~**3**. Residential facilities housing seven or more juveniles or adults in custody or court-ordered living restrictions for violations of local, state and federal law, including, but not limited to, halfway houses and detention centers

SECTION 6.

Section 17.20.040 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.20.40 Uses permitted only by conditional use permit.

A. ~~While any use may be permitted by conditional use permit pursuant to Section 17.64.020(B),~~ t**T**he following uses are ~~not~~ permitted **in a C-O zone only with the approval of a** ~~in the C-O zone except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this ~~code~~ **title**:

~~A. Any use listed in the uses permitted section in the R-1 and R-2 zones.~~

~~B. Any of the following uses:~~

1. Bail bond services;

2. Body art establishment;

3~~2~~. Garment cleaning, pressing, alteration and repair;

4~~3~~. Hair styling shop and beauty salon, including tanning salons;

5~~4~~. Photocopying and duplicating services;

6~~5~~. Recycling centers, as defined by Public Resources Code Section 14520, that are within a convenience zone, as defined by Public Resources Code Section 14509.4;

76. Scientific research and testing services;

8~~7~~. Vocational and specialized schools providing technical and cultural training;

9~~8~~. Veterinary services.

SECTION 7.

Section 17.22.040 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.22.040 Uses permitted only by conditional use permit.

A. ~~While any use may be permitted by conditional use permit pursuant to Section 17.64.020(B),~~ t**T**he following uses are ~~not~~ permitted in **a C-1 zone only with the approval of a** ~~in the C-1 zone except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this ~~code~~ **title**:

~~A. Any use listed in the uses permitted section in the R-1, R-2, R-3 and R-4 zones;~~

~~B. Any of the following uses:~~

1. Adult day care;

2. Any use listed in the uses permitted section in the R-1, R-2, R-3 and R-4 zones;

3. Assisted living facility;

4~~1~~. Automobile accessory or parts store, including stereo, phone, upholstery, and tires;

5~~2~~. Automobile tuneup specialty shops providing electrical and carburetor tuneup services and related work, when not done as a part of, or incidental to, the operation of an automobile service station;

6. **Banquet venue;**

7~~3~~.Carwashes, including detailing;

8~~4~~. Food and/or shelter service as defined in Section 17.04.285;

9~~5~~. Funeral services, including a crematory provided it is incidental to the main use;

10~~6~~. Hotels and motels;

11~~7~~. Kennels;

12~~8~~. Mobilehome or travel trailer parks;

13. **Movie theater serving alcohol;**

14~~9~~. Nurseries, lawn and garden supplies;

15~~10~~. Recycling centers, as defined by Public Resources Code Section 14520, that are within a convenience zone, as defined by Public Resources Code Section 14509.4;

16~~11~~. Restaurant and related eating places with on-site alcohol sales, entertainment or drive-through services;

17~~12~~. Scientific research and testing services;

18~~13~~. Small appliance and electronic goods repair;
19~~14~~. Theater, cinemas;

20~~15~~. Trade, vocational or specialized schools.

SECTION 8.

Section 17.24.040 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.24.040 Uses permitted only by conditional use permit.

A. ~~While any use may be permitted by conditional use permit pursuant to Section 17.64.020(B),~~ t**T**he following uses are ~~not~~ permitted **in a C-2 zone only with the approval of a** ~~in the C-2 zone except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this ~~code~~ **title**:

~~A. Any use listed in the uses permitted section in the R-1, R-2, R-3 and R-4 zones;~~

~~B. Any of the following uses:~~

1. **Adult day care;**

2~~1~~. Amusement parks, including miniature golf, water parks, batting cages and miniature car tracks;

3. Any use listed in the uses permitted section in the R-1, R-2, R-3 and R-4 zones;

1. Assisted living facility;

5~~2~~. Automobile body and fender repair and painting;

6~~3~~. Automobile machine shops;

7. Banquet venue;

8~~4~~. Bars, cocktail lounges or other establishments selling alcoholic beverages for on-site consumption where said use is the primary business;

9~~5~~. Boat and recreational vehicle dealership, new and used;

10~~6~~. Bus, train and other transit stations;

11~~7~~. Food and/or shelter service ~~agency~~ as defined in Section 17.04.285;
12~~8~~. Golf driving ranges;

13. Helipad (in conjunction with a hospital);

14~~9~~. Kennels;

15~~10~~. Mobile home or travel trailer park;

16~~11~~. Mobile home sales, new and used;

17. Movie theater serving alcohol;

18~~12~~. Pest control services;

19~~13~~. Recycling centers, as defined by Public Resources Code Section 14520, that are within a convenience zone, as defined by Public Resources Code Section 14509.4;
20~~14~~. Scientific research and testing services;

21~~15~~. Swap meet, flea markets and auction yards;

22~~16~~. Tool, equipment and utility trailer rental establishments;

23~~17~~. Warehouses.

SECTION 9.

Section 17.25.040 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.25.040 Uses permitted only by conditional use permit.

A. ~~While any use may be permitted by conditional use permit pursuant to Section 17.64.020(B),~~ t**T**he following uses are ~~not~~ permitted **in a C-B zone only with the approval of a** ~~in the C-B zone except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this ~~code~~ **title**:

1. Adult day care;

2~~A.~~ Any residential use that is located on the first or ground floor;

~~A. Any of the following uses:~~

3. Banquet venue;

4~~1~~. Food and/or shelter service ~~agencies~~ as defined in Section 17.04.285;

5. Movie theater serving alcohol;

6~~2~~. Recycling centers, as defined by Public Resources Code Section 14520, that are within a convenience zone, as defined by Public Resources Code Section 14509.4;

7~~3~~. Scientific research and testing services;

8~~4~~. Swap meets, flea markets and auction houses.

SECTION 10.

Section 17.26.040 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.26.040 Uses permitted subject to conditional use permit.

A. ~~While any use may be permitted by conditional use permit pursuant to Section 17.64.020(B),~~ t**T**he following uses are ~~not~~ permitted **in a C-C zone only with the approval of a** ~~in the C-C zone except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this ~~code~~ **title**:

1. Adult day care;

2. Assisted living facility;

3. Banquet venue;

4~~A.~~ Bars, nightclubs, cabarets, cocktail lounges or other establishments selling alcoholic beverages for on-site consumption where such use, including entertainment, is the primary business;

5~~B~~. Food and/or shelter service s as defined in Section 17.04.285;

6~~C~~. Kennels;

7. Movie theater serving alcohol;

8~~D~~. Recycling centers, as defined by Public Resources Code Section 14520, that are within a convenience zone, as defined by Public Resources Code Section 14509.4;

9~~E~~. Scientific research and testing services;
10~~F~~. Swap meets, flea markets and auction houses;

11~~G~~. Single-family dwelling that is not accessory to a commercial use.

SECTION 11.

Section 17.28.020 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.28.020 Uses permitted.

The following uses are permitted in a M-1 zone:

A. Any use permitted in the C-O, C-1 and C-2 zones; provided however, that no building shall be used as a dwelling except accessory buildings which are incidental to the permitted use of the land, and that no building shall have a dwelling unit except when such use as a dwelling unit is incidental to the primary use of the building.

B. Any use specified below, provided such use does not produce, cause or emit any fumes, odor, dust, smoke, gas, noise or vibration detrimentally impacting neighboring property and the occupants thereof. Where adopted city or other public agency standards are applicable and available to measure such impacts, such standards shall be used to determine whether a use constitutes or will constitute such a detrimental impact.

1. Adult day care;

2. Adult entertainment establishments as defined in Section 17.69.020 and subject to the regulations of Chapter 17.69.

3~~1~~. Animal hospitals, kennels and veterinaries,

4~~2~~. Automobile and light truck, two-axle vehicles, parking and storage,

5~~3~~. Automobile assembling, body and fender works, painting, upholstering, dismantling and used parts storage, when operated or maintained wholly within a building,

6~~4~~. Bakeries,

7. Banquet venue.

8~~5~~. Boat buildings,

9~~6~~. Bottling plant,

10~~7~~. Building materials storage yards,

11~~8~~. Cabinet or carpenter shop,

12~~9~~. Carpet, awning, blinds, mattress or upholstery shops, including cleaning and repair,

13~~10~~. Concrete batch plants, portable, not to exceed two-yard capacity,

14~~11~~. Contractor's plants and storage yards,

15~~12~~. Distributing plants,

16~~13~~. Electric welding and electroplating,

17~~14~~. Frozen food lockers,

18~~15~~. Furniture and automobile upholstering operations not confined wholly to a building,

19~~16~~. Ice and cold storage plants,

20~~17~~. Laboratories, experimental research and testing,

21~~18~~. Laundries, cleaning and dyeing plants,

22~~19~~. Lumberyards,

23~~20~~. Machine shops (except punch presses of over twenty tons rated capacity, drop hammers and automatic screw machines),

24~~21~~. Paint mixing plants (not employing a boiling process),

25~~22~~. Public utilities service yards, power plants or distributing stations,

26~~23~~. Rubber fabrication or products made from finished rubber,

27~~24~~. Sheet metal shops,

28~~25~~. Stone monument works,

29~~26~~. Storage spaces for transit and transportation equipment,

30~~27~~. Tool rental and equipment,

31~~28~~. Truck repairing and overhauling shops,

32~~29~~. Welding, metal fabricating and blacksmith shops,

33~~30~~. Wholesale businesses, storage buildings and warehouses,

34~~31~~. Manufacturer of:

a. Arts and crafts,

b. Billboards and advertising structures, electric neon signs,

c. Ceramic products,

d. Clothing or garments,

e. Cosmetics, perfumes and toiletries, drugs and pharmaceuticals,

f. Electronic instruments and devices, radios, televisions, phonographs and business machines,

g. Food products (except the rendering or refining of fats or oils),

h. Furniture,

i. Musical instruments and toys,

j. Prefabricated buildings,

k. Shoes,

l. Soap (cold mix only),

m. Textiles. Manufacture, compounding, assembling or treatment of articles or merchandise from the following previously prepared materials: bone, cellophane, canvas, cloth, cork, feathers, felt, fiber, fur, glass, hair, horn, leather, paper, plastics, precious or semiprecious metals or stones, shell, textiles, tobacco, wood, yards and paint, not employing a boiling process;

~~32. Adult entertainment establishments as defined in Section 17.69.020 and subject to the regulations of Chapter 17.69.~~

C. The accessory buildings or structures necessary to such use located on the same lot or parcel of land.

D. The Bakersfield Airpark provides an expanded airport/aircraft landing field for recreation, agricultural, and commercial/industrial uses. Therefore, in addition to the uses allowed in this section, the following additional uses are permitted within the Bakersfield Airpark property:

1. Agricultural crop dusting services and related chemical storage;

2. Aircraft rental;

3. Aircraft repair and maintenance;

4. Aircraft runways and landing fields;

5. Aviation related businesses;

6. Aviation fuel sales;

7. Aviation related manufacturing;

8. Flight training schools;

9. Freight and package delivery services;

10. Hangers and aircraft tie-downs.

SECTION 12.

Section 17.28.030 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.28.030 Uses permitted only by conditional use permit.

A. ~~While any use may be permitted by conditional use permit pursuant to Section 17.64.020(B), t~~The following uses are ~~not~~ permitted in the M-1 zone **only with the approval of a** ~~except by~~ conditional use permit issued in accordance with the procedures provided in Chapter 17.64 of this ~~code~~ **title**:

1~~A~~. Agricultural packing plants;

2~~B~~. Aircraft and automobile factories;

3~~C~~. Automobile parts manufacturer;

4~~D~~. Battery manufacturer;

5~~E~~. Breweries or distilleries, large;

6~~F~~. Clinics, hospitals, sanitariums or other buildings for contagious, mental, drug or liquor addiction cases;

7~~G~~. Equestrian establishments, stables, riding academies, schools or amusements;

8~~H~~. Food and/or shelter service agencies as defined in Section 17.04.285;

9~~I~~. Freighting or trucking yards or terminals;

10. Helipad (in conjunction with a hospital);

11~~J~~. Livestock slaughtering and processing, wholly within a building;

12~~K~~. Machine shops, including punch presses and automatic screw machines;

13. Movie theater serving alcohol;

14~~L~~. Planing mills;

15~~M~~. Recycling centers, as defined by Public Resources Code Section 14520, that are within a convenience zone, as defined by Public Resources Code Section 14509.4;

16~~N~~. Residential dwellings;

17~~O~~. Tire rebuilding, recapping and retreading plants;

18. Truck stop.

SECTION 13.

Section 17.30.020 of the Bakersfield Municipal Code is hereby amended to read as follows:

17.30.020 Uses permitted.

The following uses are permitted in an M-2 zone:

A. Any use permitted in the M-1 zone; provided, however, that no building shall be used as a dwelling except accessory buildings which are incidental to the permitted use of the land, and that no building shall have a dwelling unit except when such use as a dwelling unit is incidental to the primary use of the building;

B. Any of the following uses:

1. Acetylene gas manufacture or storage;

2. Adult entertainment establishments as defined in Section 17.69.020 and subject to the regulations of Chapter 17.69;

3~~2~~. Aircraft and automobile factories;

4~~3~~. Agricultural packing plants (vegetables and fruits);

5~~4~~. Alcohol and alcoholic beverages manufacture;

6~~5~~. Ammonia, chlorine and bleaching powder manufacture;

7~~6~~. Automobile and truck manufacture;

8. Automobile and truck parts manufacturer;

9~~7~~. Bag cleaning;

10. Battery manufacturer;

11~~8~~. Blast furnaces;

12~~9~~. Boiler or tank works;

13~~10~~. Breweries or distilleries, large;

14~~11~~. Brick, tile or terra cotta products manufacture;

15~~12~~. Building materials manufacture;

16~~13~~. Carpet and rug manufacture;

17~~14~~. Cement and lime manufacturing when the manufacturing plant is equipped capable of collecting at least ninety-seven percent of all particulate matter from kiln gases;

18~~15~~. Clay product manufacture;

19~~16~~. Coke ovens;

20~~17~~. Cotton gins or oil mills;

21. Creameries;

~~22~~18. Crematories;

23~~19~~. Creosote treatment or manufacture;

24~~20~~. Disinfectant manufacture;

25~~21~~. Distillation of coal, wood or tar;

26~~22~~. Dyestuffs manufacture;

27~~23~~. Exterminator or insect poison manufacture;

28~~24~~. Feed, flour and grains mills;

29~~25~~. Firearms manufacture;

30. Food and/or shelter service agencies as defined in Section 17.04.285;

31~~26~~. Forge plants;

32~~27~~. Freighting and trucking yards and terminals;

33~~28~~. Freight classification yards;

34~~29~~. Glass and glass product manufacture;

35~~30~~. Grain elevator;

36. Helipad (in conjunction with a hospital);

37~~31~~. Iron, steel, brass or copper foundries or fabrication plants, and heavy weight casting;

38~~32~~. Lamp black manufacture;

39~~33~~. Linoleum or oiled products manufacture;

40~~34~~. Machine shops including punch presses and automatic screw machines;

41. **Metal container manufacturer;**

42~~35~~. Ore reduction;

43~~36~~. Paint, oil, shellac, turpentine or varnish manufacture;

44~~37~~. Paper or pulp manufacture;

45~~38~~. Petroleum refining and reclaiming plants;

46~~39~~. Planing mills;

47~~40~~. Plastic manufacture;

48~~41~~. Potash works;

49~~42~~. Railroad roundhouses and repair shops;

50~~43~~. Rolling mills;

51~~44~~. Rubber processing and manufacture;

52~~45~~. Sawmills;

53~~46~~. Soap manufacture;

54~~47~~. Sodium compounds manufacture;

55~~48~~. Starch manufacture;

56~~49~~. Tar roofing or waterproofing or other tar products manufacture;

~~50. Automobile and truck parts manufacturer;~~

~~51. Battery manufacturer;~~

~~52. Creameries;~~

~~53. Metal container manufacturer;~~

57~~54~~. Tire rebuilding, recapping, and retreading plants;

~~55. Adult entertainment establishments as defined in Section 17.69.020 and subject to the regulations of Chapter 17.69;~~

~~56. Food and/or shelter service agencies as defined in Section 17.04.285;~~

58. Trucks

C. The accessory buildings or structures necessary to such use located on the same lot or parcel of land.

This Ordinance shall be posted in accordance with the provisions of the Bakersfield Municipal Code and shall become effective thirty (30) days from and after the date of its passage.

---------o0o----------

I HEREBY CERTIFY that the foregoing Ordinance was passed and adopted, by the Council of the City of Bakersfield at a regular meeting thereof held on _____ by the following vote:

AYES:	COUNCILMEMBER:	RIVERA, GONZALES, WEIR, SMITH, FREEMAN, SULLIVAN, PARLIER
NOES:	COUNCILMEMBER:	_____
ABSTAIN:	COUNCILMEMBER:	_____
ABSENT:	COUNCILMEMBER:	_____

_____
JULIE DRIMAKIS, CMC
CITY CLERK and Ex Officio Clerk of the Council of the City of Bakersfield

APPROVED:

By: _____
KAREN GOH
Mayor

APPROVED AS TO FORM:
VIRGINIA GENNARO
City Attorney

By: _____
VIRIDIANA GALLARDO-KING
Deputy City Attorney

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COVER SHEET
PLANNING DEPARTMENT
STAFF REPORT

MEETING DATE: June 18, 2020 **ITEM NUMBER:** Workshop7.(a.)

TO: Planning Commission

FROM: Christopher Boyle, Development Services Director

PLANNER:

DATE:

WARD:

SUBJECT:
Workshop regarding General Plan.

APPLICANT:

OWNER:

LOCATION:

STAFF RECOMMENDATION:
Receive and file.