County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

DATE: May 1, 2024

TO: Department of Public Works and Planning, Attn: Steven E. White, Director
Department of Public Works and Planning, Attn: Bernard Jimenez, Planning and Resource Management Officer
Development Services and Capital Projects, Attn: William M. Kettler, Deputy Director of Planning
Development Services and Capital Projects, Attn: Chris Motta, Division Manager
Development Services and Capital Projects, Attn: Tawanda Mtunga Principal Planner
Development Services and Capital Projects, Current Planning, Attn: David Randall, Senior Planner
Development Services and Capital Projects, Policy Planning, ALCC, Attn: Mohammad Khorsand, Senior Planner
Development Services and Capital Projects, Zoning & Permit Review, Attn: Daniel Gutierrez, Senior Planner
Development Services and Capital Projects, Site Plan Review, Attn: Daniel Mendez/james Anders
Development Services and Capital Projects, Building & Safety/Plan Check, Attn: Arnold Valdivia, Supervising Building Inspector
Development Engineering, Attn: Laurie Kennedy, Grading/Mapping
Road Maintenance and Operations, Attn: Wendy Nakagawa/Nadia Lopez
Design Division, Transportation Planning Unit, Attn: Hector Luna
Water and Natural Resources Division, Attn: Augustine Ramirez/Roy Jimenez
Department of Public Health, Environmental Health Division, Attn: Deep Sidhu/Kevin Tsuda
U.S. Fish and Wildlife Service, San Joaquin Valley Division, Attn: Patricia Cole, Biologist
CA Regional Water Quality Control Board, Attn: centralvalleyfresno@waterboards.ca.gov
Fresno Metropolitan Flood Control District, Attn: developmentreview@fresnofloodcontrol.org
CA Department of Fish and Wildlife, Attn: R4CEQA@wildlife.ca.gov
State Water Resources Control Board, Division of Drinking Water, Fresno District, Attn: Jose Robledo/Cinthia Reyes
Dumna Wo Wah Tribal Government, Attn: Robert Ledger, Tribal Chairman/Eric Smith, Cultural Resources Manager/Chris Acree, Cultural Resources Analyst
Picayune Rancheria of the Chukchansi Indians, Attn: Heather Airey/Cultural Resources Director
Santa Rosa Rancheria Tachi Yokut Tribe, Attn: Ruben Barrios, Tribal Chairman/ Hector Franco, Director/Shana Powers, Cultural Specialist II
Table Mountain Rancheria, Attn: Robert Pennell, Cultural Resources Director/Kim Taylor, Cultural Resources Department/Sara Barnett, Cultural Resources Department

San Joaquin Valley Unified Air Pollution Control District (PIC-CEQA Division),
Attn: PIC Supervisor
Agricultural Commissioner, Attn: Melissa Cregan
CALTRANS, Attn: Dave Padilla
Westside Subbasin GSA, Attn: Kiti Buelna Campbell, P.E.
Westlands Water District, Attn: Jose Gutierrez
Fresno County Fire Protection District, Attn: fku.prevention-planning@fire.ca.gov

FROM: Ejaz Ahmad, Planner
Development Services and Capital Projects Division

SUBJECT: Unclassified Conditional Use Permit, Numbers 3789, 3790, 3791, 3792 amending Unclassified Conditional Use Permit (CUP) No. 3555 and Addendum to the Environmental Impact Report (EIR) No. 7230 originally adopted for the project.

APPLICANT: Madison Novak c/o RE Scarlet LLC

DUE DATE: May 15, 2024

The Department of Public Works and Planning, Development Services and Capital Projects Division is requesting comments on the subject proposal.

The Environmental Impact Report (EIR) No. 7230 for Unclassified Conditional Use Permit (CUP) No. 3555 to allow the construction and operation of a 400-megawatt (MW) solar photovoltaic (PV) generation facility and up to 400 MW energy storage known as the Scarlet Solar Project was certified by County of Fresno on March 15, 2022.

The application proposes an addendum to EIR 7230 to incorporate an updated hydrology technical memorandum, and to incorporate an updated air quality technical memorandum, and remove the mitigation measure excluding the use of onsite groundwater.

The application also proposes to increase the physical footprint of the approved battery storage system; optimize the project's approved layout; and to allow for sharing of electrical transmission and control facilities with an adjacent project; and to transfer a portion of the project's approved footprint to an adjacent proposed project; The four proposed Unclassified Conditional Use permits 3789, 3790, 3791, and 3792 are proposed to divide the existing Unclassified Conditional Use Permit into four separate entitlements that will allow for phased decommissioning of the Project. The four Phases and corresponding CUPs are: Phase I-II consists of solar photovoltaic modules and battery energy storage systems. Phase III consists of energy storage facilities and Phase IV consists of the electrical transmission and control equipment facilities that are to be shared between Phase I-III and adjacent Sonrisa solar photovoltaic (PV) generation facility.

Note: The proposed addendum to the EIR 7230 is consistent with CEQA Guidelines Section 15164 because no subsequent EIR is expected to be required by Public Resources Code Section 21166 and CEQA Guidelines Section 15162. Briefly, CEQA requires a lead agency to prepare an addendum to a previously certified EIR "if some changes or additions are necessary but none of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR have occurred" (CEQA Guidelines Section 15164).

We must have your comments by **May 15, 2024**. Any comments received after this date may not be considered.

NOTE - THIS WILL BE OUR ONLY REQUEST FOR WRITTEN COMMENTS. If you do not have comments, please provide a "NO COMMENT" response to our office by the above deadline (e-mail is also acceptable; see email address below).

Please address any correspondence or questions related to environmental and/or policy/design issues to me, Ejaz Ahmad, Planner, Development Services and Capital Projects Division, Fresno County Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721, or call (559) 600-4204 or email eahmad@fresnocountyca.gov

EA:
G:\4360Devs&Pln\PROJSEC\PROJDOCS\CUP\3500-3599\3555 - Amended\ROUTING\CUP 3555 - Routing Ltr.doc

Enclosures

Date Received:

CUP 3789
(Application No.)

Fresno County Department of Public Works and Planning

MAILING ADDRESS:
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ■ Amendment Application
- ☐ Amendment to Text
- ☐ Conditional Use Permit
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
- ☐ Time Extension for _____
- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☐ Other _____

DESCRIPTION OF PROPOSED USE OR REQUEST:

EDP seeks to amend the Scarlet Project Conditional Use Permit No.3555.

The Scarlet Project seeks to divide into different 'phases.' This application supports 'Phase I.'

CEQA DOCUMENTATION: ☐ *Initial Study* ☐ *PER* ■ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. **Attach Copy of Deed, including Legal Description.**

LOCATION OF PROPERTY: North + South side of Manning Avenue
between S Derrick Ave and S San Mateo Ave
Street address: 30750- West Manning Ave, San Joaquin, CA 93660

APN: 028-071-47 Parcel size: approximately 1853 acres Section(s)-Twp/Rg: S 20, 21, 29, 31 - T 15 S/R 15 E

ADDITIONAL APN(s): 028-071-34,39 + 028-111-01,02,04,06,07,09,10,13,14,15,16,17,19

DocuSigned by:
I, Madison Novak (*signature*), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Owner (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Applicant (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Representative (Print or Type)	Address	City	Zip	Phone

CONTACT EMAIL:

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.: CUP 3789 Fee: $ 4,561.50
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: Fee: $
Ag Department Review: Fee: $ 93.00
Health Department Review: Fee: $ 992.00
Received By: Ejaz Invoice No.: TOTAL: $ 5,646.50

UTILITIES AVAILABLE:

WATER: Yes ☐ / No ■
Agency: _____

SEWER: Yes ☐ / No ■
Agency: _____

STAFF DETERMINATION: This permit is sought under Ordinance Section: _____

Related Application(s): CUP 3555
Zone District: _____
Parcel Size: _____

Sect-Twp/Rg: ____ - T____ S /R____ E
APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____

over.....

Date Received:

CUP3790 (Application No.)

Fresno County Department of Public Works and Planning

MAILING ADDRESS:
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ■ Amendment Application
- ☐ Amendment to Text
- ☐ Conditional Use Permit
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
- ☐ Time Extension for _____
- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☐ Other _____

DESCRIPTION OF PROPOSED USE OR REQUEST:

EDP seeks to amend the Scarlet Project Conditional Use Permit No.3555.

The Scarlet Project seeks to divide into different 'phases.' This application supports 'Phase II.'

CEQA DOCUMENTATION: ☐ *Initial Study* ☐ *PER* ■ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. **Attach Copy of Deed, including Legal Description.**

LOCATION OF PROPERTY: North + South side of Manning Avenue
between S Derrick Ave and S San Mateo Ave
Street address: 30750- West Manning Ave, San Joaquin, CA 93660

APN: 028-071-47 Parcel size: approximately 1710 acres Section(s)-Twp/Rg: S 21,22,27,28 - T 15 S/R 15 E

ADDITIONAL APN(s): 028-071-48,49 + 028-081-66 + 028-111-19,20 + 028-120-61,62

I, DocuSigned by: Madison Novak 2AC9C2FEA33840A... (*signature*), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Owner (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Applicant (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Representative (Print or Type)	Address	City	Zip	Phone

CONTACT EMAIL:

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.: CUP 3790 Fee: $ 4,561.50
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: Fee: $
Ag Department Review: Fee: $ 93.00
Health Department Review: Fee: $ 992.00
Received By: Ejaz Invoice No.: TOTAL: $ 5,646.50

UTILITIES AVAILABLE:

WATER: Yes ☐ / No ■
Agency: _____

SEWER: Yes ☐ / No ■
Agency: _____

STAFF DETERMINATION: This permit is sought under Ordinance Section: _____

Related Application(s): CUP 3555

Zone District: _____

Parcel Size: _____

Sect-Twp/Rg: ____ - T____ S /R____ E

APN # ___ - ___ - ____

APN # ___ - ___ - ____

APN # ___ - ___ - ____

APN # ___ - ___ - ____

over.....

Date Received:

CUP3791
(Application No.)

Fresno County Department of Public Works and Planning

MAILING ADDRESS:
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ■ Amendment Application
- ☐ Amendment to Text
- ☐ Conditional Use Permit
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
- ☐ Time Extension for _____
- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☐ Other _____

DESCRIPTION OF PROPOSED USE OR REQUEST:

EDP seeks to amend the Scarlet Project Conditional Use Permit No.3555.

The Scarlet Project seeks to divide into different 'phases.' This application supports 'Phase III.'

CEQA DOCUMENTATION: ☐ *Initial Study* ☐ *PER* ■ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. **Attach Copy of Deed, including Legal Description.**

LOCATION OF PROPERTY: North + South side of Manning Avenue
between S Derrick Ave and S San Mateo Ave
Street address: 30750- West Manning Ave, San Joaquin, CA 93660

APN: 028-071-47 Parcel size: approximately 20 acres Section(s)-Twp/Rg: S 21 - T 15 S/R 15 E

ADDITIONAL APN(s): _____

DocuSigned by:
I, Madison Novak (*signature*), declare that I am the owner, or authorized representative of the owner, of the above described property and that the application and attached documents are in all respects true and correct to the best of my knowledge. The foregoing declaration is made under penalty of perjury.

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Applicant (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Representative (Print or Type)	Address	City	Zip	Phone

CONTACT EMAIL:

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.:	CUP3791	Fee: $ 4,561.50
Application Type / No.:		Fee: $
Application Type / No.:		Fee: $
Application Type / No.:		Fee: $
PER/Initial Study No.:		Fee: $
Ag Department Review:		Fee: $ 93.00
Health Department Review:		Fee: $ 992.00
Received By: Ejaz	Invoice No.:	TOTAL: $ 5646.50

UTILITIES AVAILABLE:

WATER: Yes ☐ / No ■
Agency: _____

SEWER: Yes ☐ / No ■
Agency: _____

STAFF DETERMINATION: This permit is sought under Ordinance Section: _____

Related Application(s): CUP 3555

Zone District: _____

Parcel Size: _____

Sect-Twp/Rg: ____ - T____ S /R____ E

APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____

over.....

Date Received:

CUP 3792 (Application No.)

Fresno County Department of Public Works and Planning

MAILING ADDRESS:
Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St., 6th Floor
Fresno, Ca. 93721

LOCATION:
Southwest corner of Tulare & "M" Streets, Suite A
Street Level
Fresno Phone: (559) 600-4497

APPLICATION FOR:

- ☐ Pre-Application (Type) _____
- ■ Amendment Application
- ☐ Amendment to Text
- ☐ Conditional Use Permit
- ☐ Variance (Class)/Minor Variance
- ☐ Site Plan Review/Occupancy Permit
- ☐ No Shoot/Dog Leash Law Boundary
- ☐ General Plan Amendment/Specific Plan/SP Amendment)
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- ☐ Director Review and Approval
- ☐ for 2nd Residence
- ☐ Determination of Merger
- ☐ Agreements
- ☐ ALCC/RLCC
- ☐ Other _____

DESCRIPTION OF PROPOSED USE OR REQUEST:

EDP seeks to amend the Scarlet Project Conditional Use Permit No.3555.

The Scarlet Project seeks to divide into different 'phases.' This application supports 'Phase IV.'

CEQA DOCUMENTATION: ☐ *Initial Study* ☐ *PER* ■ *N/A*

PLEASE USE FILL-IN FORM OR PRINT IN BLACK INK. Answer all questions completely. Attach required site plans, forms, statements, and deeds as specified on the Pre-Application Review. **Attach Copy of Deed, including Legal Description.**

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ADDITIONAL APN(s): 028-071-39 + 028-111-01,07,10,13,14,15,16,17,19

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DocuSigned by: 20C9C25EA33640A...

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Owner (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Applicant (Print or Type)	Address	City	Zip	Phone
Madison Novak	710 NW 14th Ave, Suite 250	Portland	97209	713-205-7587
Representative (Print or Type)	Address	City	Zip	Phone

CONTACT EMAIL:

OFFICE USE ONLY (*PRINT FORM ON GREEN PAPER*)

Application Type / No.: CUP 3792 Fee: $ 4,561.50
Application Type / No.: Fee: $
Application Type / No.: Fee: $
Application Type / No.: Fee: $
PER/Initial Study No.: Fee: $
Ag Department Review: Fee: $ 93.00
Health Department Review: Fee: $ 992.00
Received By: EJG2 Invoice No.: TOTAL: $5,646.50

UTILITIES AVAILABLE:

WATER: Yes ☐ / No ■
Agency: _____

SEWER: Yes ☐ / No ■
Agency: _____

STAFF DETERMINATION: This permit is sought under Ordinance Section: _____

Related Application(s): CUP 3555

Zone District: _____

Parcel Size: _____

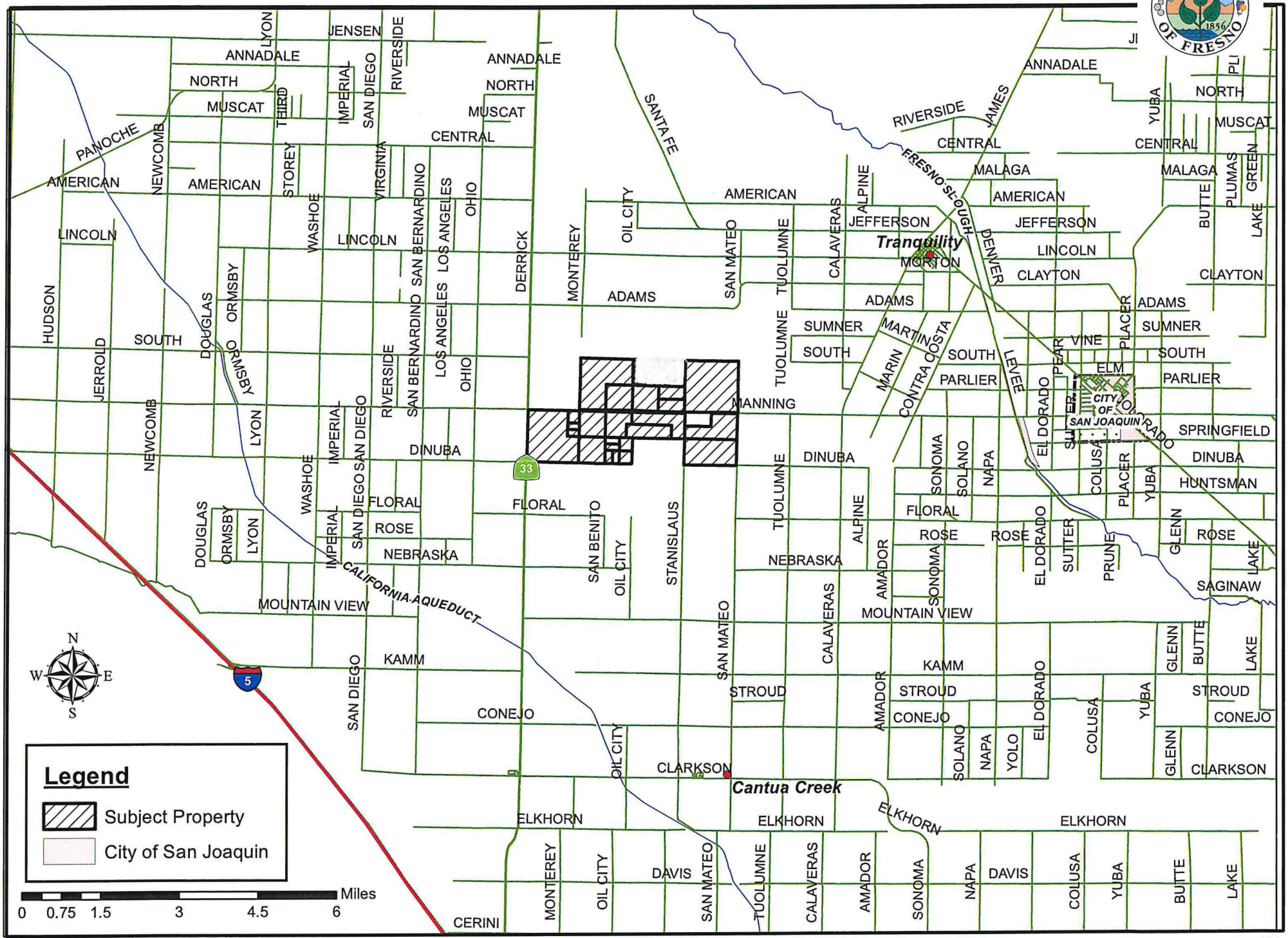
Sect-Twp/Rg: ____ - T____ S /R____ E

APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____
APN # ___ - ___ - ____

over.....

EIR 7230 & CUP 3555

LOCATION MAP

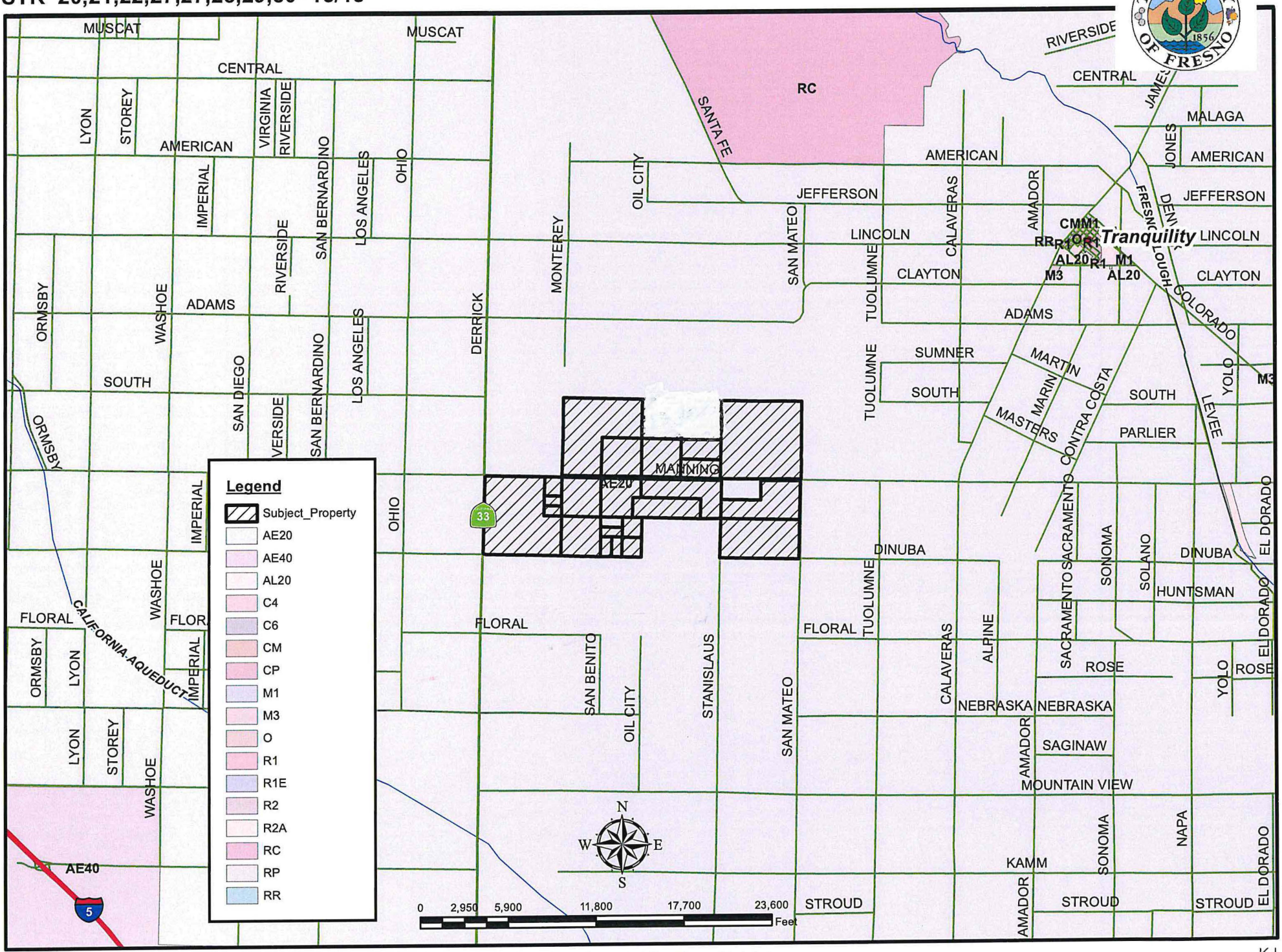


Prepared by: County of Fresno Department of Public Works and Planning, Development Services Division

K1

CUP 3555
STR 20,21,22,27,27,28,29,30- 15/15

EXISTING ZONING MAP

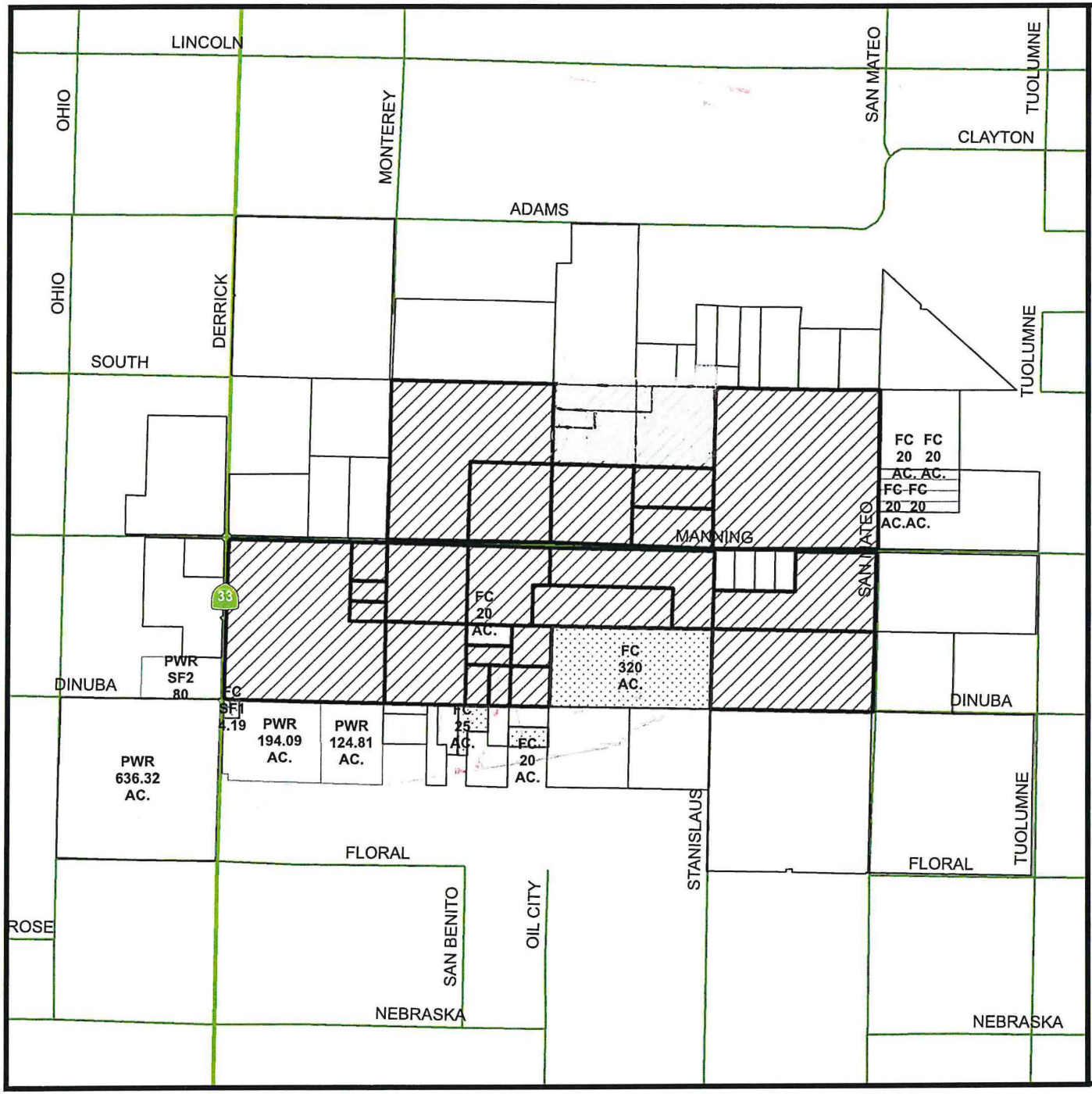


Prepared by: County of Fresno Department of Public Works and Planning, Development Services Division

KJ

CUP 3555

EXISTING LAND USE MAP



LEGEND
FC - FIELD CROP
PWR - POWER GENERATION SITE
SF#- SINGLE FAMILY RESIDENCE
V - VACANT

LEGEND:

Subject Property

Ag Contract Land

N
W E
S

0 1,250 2,500 5,000 7,500 10,000 Feet

Department of Public Works and Planning
Development Sevices Division

Prepared by: County of Fresno Department of Public Works and Planning, Development Services Division

KJ

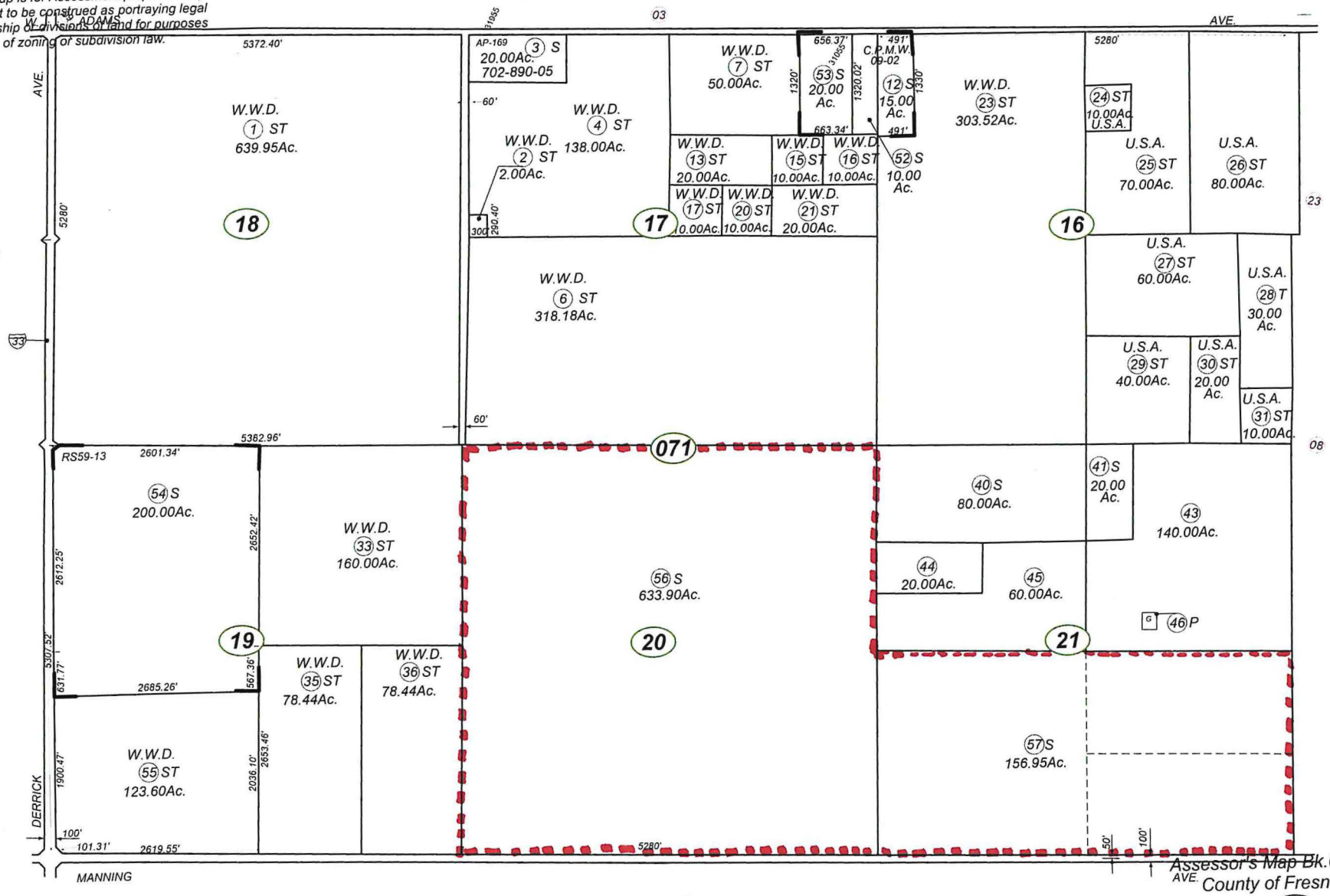
-NOTE-
This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.

SEC'S 16, 17, 18, 19, 20 & 21 T.15S., R.15E., M.D.B.& M.

Tax Rate Area
111-018
140-006

028-07

1"=1200'



Assessor's Map Bk.028 - Pg.07
County of Fresno, Calif.

Agricultural Preserve
12/26/2023 BD Certificate of Parcel Map Waiver No. 09-02, Doc# 0027230, 2-25-09
Record of Survey - Bk. 59, Pgs. 13-14

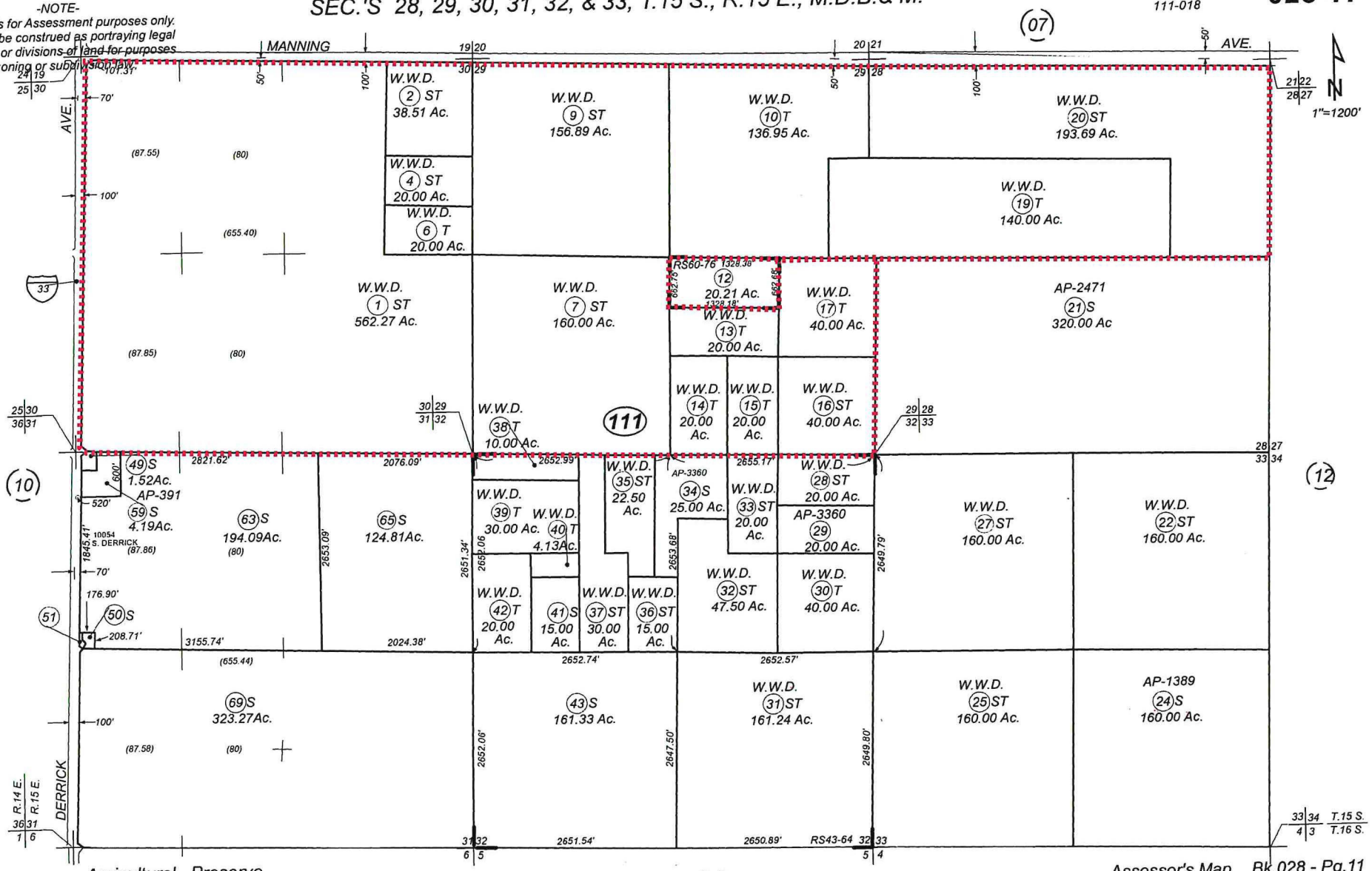
Note - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

-NOTE-
This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.

SEC.'S 28, 29, 30, 31, 32, & 33, T.15 S., R.15 E., M.D.B.& M.

Tax Rate Area 111-018

028-11



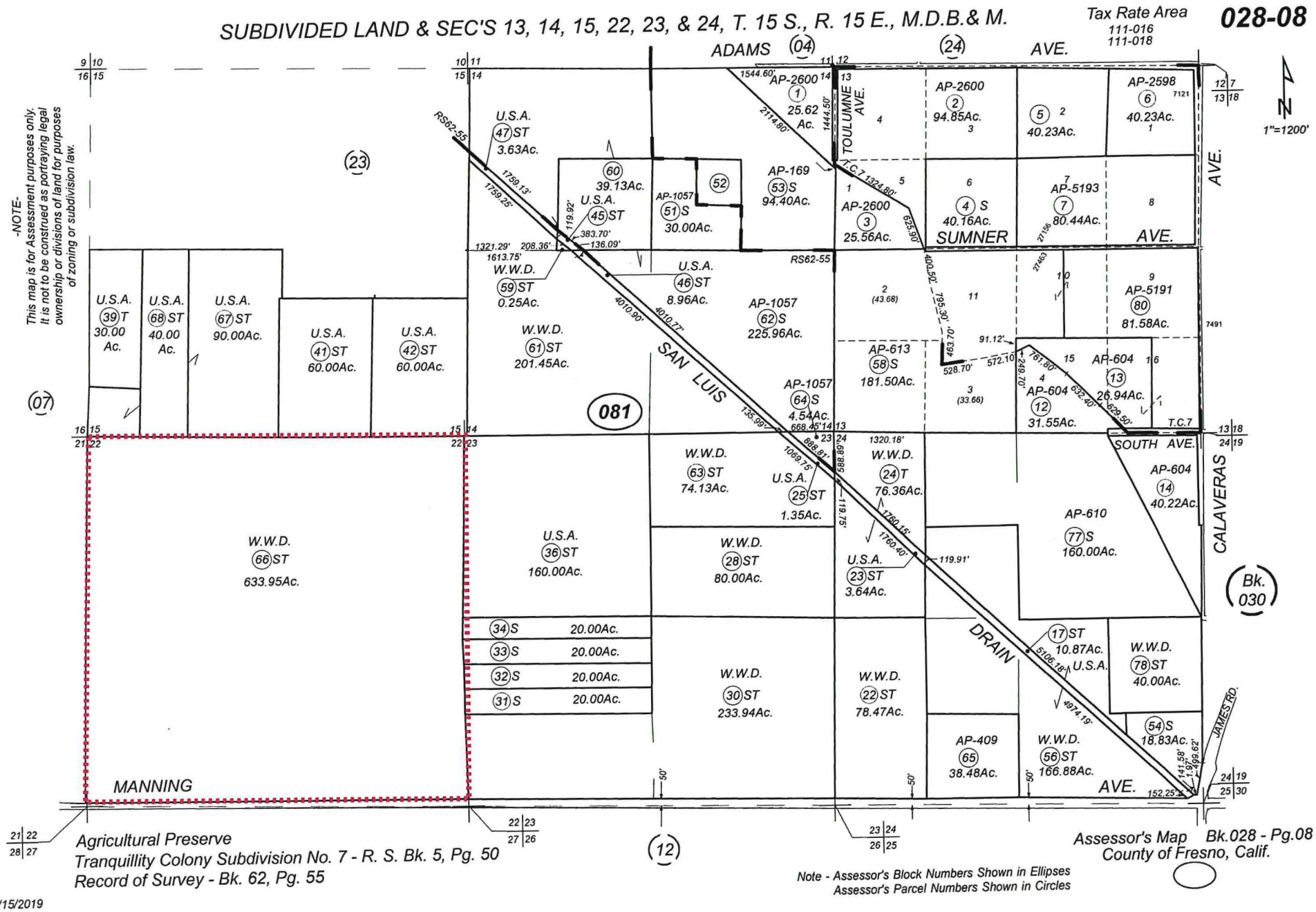
Agricultural Preserve
Record of Survey - Bk. 43, Pg. 64
Record of Survey - Bk. 60, Pg. 76

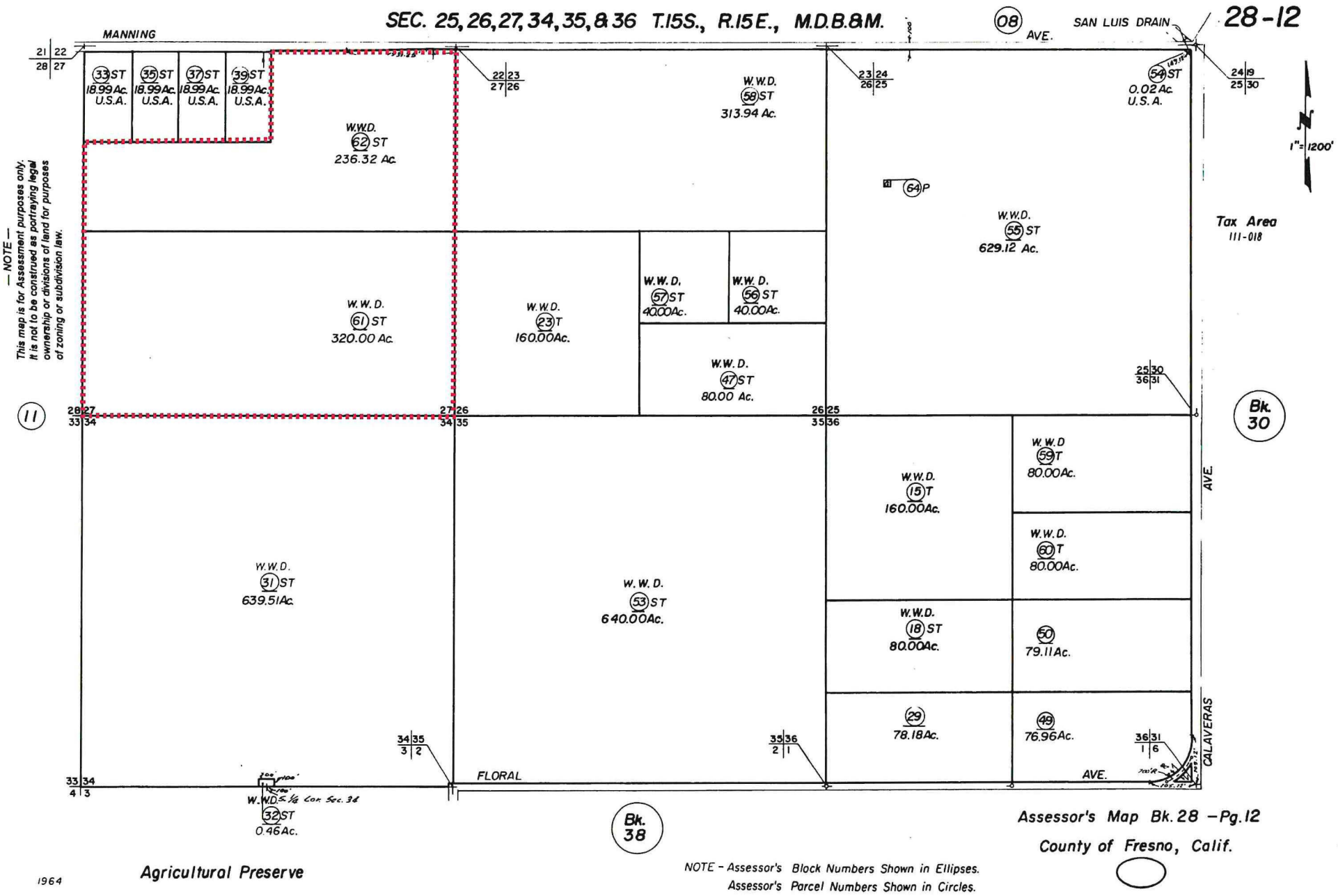
Bk. 038

Note - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

Assessor's Map Bk.028 - Pg.11
County of Fresno, Calif.

1/22/2019


SUBDIVIDED LAND & SEC'S 13, 14, 15, 22, 23, & 24, T. 15 S., R. 15 E., M.D.B.& M.
Tax Rate Area
111-016
111-018
028-08
-NOTE-
This map is for Assessment purposes only.
It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.
ADAMS AVE.
TOULUMNE AVE.
SUMNER AVE.
SAN LUIS
SOUTH AVE.
CALAVERAS
DRAIN
JAMES RD.
MANNING
AVE.
1"=1200'
081
Bk. 030
U.S.A. 47 ST 3.63Ac.
60 39.13Ac.
52
AP-1057 51 S 30.00Ac.
AP-169 53 S 94.40Ac.
AP-2600 1 25.62 Ac.
AP-2600 2 94.85Ac.
AP-2600 3 25.56Ac.
AP-2600 4 S 40.16Ac.
5 2 40.23Ac.
AP-2598 6 40.23Ac.
AP-5193 7 80.44Ac.
8
U.S.A. 45 ST
U.S.A. 46 ST 8.96Ac.
W.W.D. 59 ST 0.25Ac.
W.W.D. 61 ST 201.45Ac.
AP-1057 62 S 225.96Ac.
2 (43.68)
11
AP-5191 80 81.58Ac.
AP-613 58 S 181.50Ac.
AP-1057 64 S 4.54Ac.
3 (33.66)
AP-604 13 26.94Ac.
AP-604 12 31.55Ac.
AP-604 14 40.22Ac.
U.S.A. 39 T 30.00 Ac.
U.S.A. 68 ST 40.00 Ac.
U.S.A. 67 ST 90.00Ac.
U.S.A. 41 ST 60.00Ac.
U.S.A. 42 ST 60.00Ac.
W.W.D. 66 ST 633.95Ac.
U.S.A. 36 ST 160.00Ac.
W.W.D. 63 ST 74.13Ac.
U.S.A. 25 ST 1.35Ac.
W.W.D. 24 T 76.36Ac.
W.W.D. 28 ST 80.00Ac.
U.S.A. 23 ST 3.64Ac.
AP-610 77 S 160.00Ac.
34 S 20.00Ac.
33 S 20.00Ac.
32 S 20.00Ac.
31 S 20.00Ac.
W.W.D. 30 ST 233.94Ac.
W.W.D. 22 ST 78.47Ac.
17 ST 10.87Ac.
U.S.A.
W.W.D. 78 ST 40.00Ac.
54 S 18.83Ac.
AP-409 65 38.48Ac.
W.W.D. 56 ST 166.88Ac.
RS62-55
1759.13'
1759.25'
1544.60'
2114.80'
1444.50'
1324.80'
625.90'
1321.29'
1613.75'
208.36'
383.70'
136.09'
119.92'
4010.90'
4010.77'
135.99'
668.45'
888.81'
1069.75'
1320.18'
588.89'
119.57'
1760.15'
1760.40'
119.91'
5106.18'
4974.19'
141.58'
1799.62'
152.25'
400.00'
795.30'
463.70'
91.12'
572.10'
528.70'
761.80'
249.70'
632.40'
629.50'
27463
27156
7491
T.C.7
50'
Agricultural Preserve
Tranquillity Colony Subdivision No. 7 - R. S. Bk. 5, Pg. 50
Record of Survey - Bk. 62, Pg. 55
Note - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles
Assessor's Map Bk.028 - Pg.08
County of Fresno, Calif.
7/15/2019


SEC. 25, 26, 27, 34, 35, & 36 T.15S., R.15E., M.D.B.&M.
28-12
MANNING
08
AVE.
SAN LUIS DRAIN
1"=1200'
— NOTE —
This map is for Assessment purposes only. It is not to be construed as portraying legal ownership or divisions of land for purposes of zoning or subdivision law.
Tax Area
111-018
33 ST 18.99 Ac. U.S.A.
35 ST 18.99 Ac. U.S.A.
37 ST 18.99 Ac. U.S.A.
39 ST 18.99 Ac. U.S.A.
W.W.D. 62 ST 236.32 Ac.
W.W.D. 58 ST 313.94 Ac.
54 ST 0.02 Ac. U.S.A.
64 P
W.W.D. 55 ST 629.12 Ac.
W.W.D. 61 ST 320.00 Ac.
W.W.D. 23 T 160.00 Ac.
W.W.D. 57 ST 40.00 Ac.
W.W.D. 56 ST 40.00 Ac.
W.W.D. 47 ST 80.00 Ac.
11
Bk. 30
W.W.D 59 T 80.00 Ac.
W.W.D. 15 T 160.00 Ac.
W.W.D. 60 T 80.00 Ac.
W.W.D. 31 ST 639.51 Ac.
W.W.D. 53 ST 640.00 Ac.
W.W.D. 18 ST 80.00 Ac.
50 79.11 Ac.
29 78.18 Ac.
49 76.96 Ac.
W.W.D. S. 1/4 Cor. Sec. 36
32 ST 0.46 Ac.
FLORAL
AVE.
CALAVERAS
Bk. 38
Agricultural Preserve
1964
NOTE - Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.
Assessor's Map Bk. 28 — Pg. 12
County of Fresno, Calif.

Project Description/Operational Statement

EIR 7230
CUP 3555

Project Overview

On September 9, 2021, the County of Fresno's Planning Commission certified Environmental Impact Report (EIR) NO. 7230 for the Scarlet Solar Energy Project and approved and issued to RE Scarlet LLC (Applicant) the Unclassified Conditional Use Permit (CUP) No. 3555. The Applicant seeks an Addendum to CUP No. 3555 to address the items below:

- Shared use of infrastructure with the Sonrisa Solar Park (Draft EIR No. 7869), including the gen-tie, switching station, electrical substation, and infrastructure to support efficient operation and maintenance of the site; As approximately shown in *Figure 1*.
- Transfer management of approximately 320 acres approved under CUP No. 3555 to the Sonrisa Solar Park (Draft EIR No. 7869)
- Revision to the Air Quality Analysis
- Increased footprint associated with energy storage infrastructure
- Revision to Hydrology Section
- Allow for phased decommissioning of the Project, as shown in *Figure 2*.

The CUP allows for the construction, operation, maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating and energy storage facility and associated infrastructure to be known as the Scarlet Solar Energy Project (Project). The Project will generate a total of up to 400 megawatts of alternating current (MWac) at the point of electrical grid interconnection on approximately 4,089 acres in unincorporated western Fresno County. The Project will provide solar power to utility customers by interconnecting to the regional electricity grid at Pacific Gas and Electric Company's (PG&E) existing Tranquillity Switching Station located just west of the Project site.

The Project will operate year-round to generate solar electricity during daylight hours, and would store and dispatch power at the energy storage system during both daylight and non-daylight hours. The Project is being constructed in continuous phases. The first phase began construction in September 2022. The last phase is anticipated to be online as early as late 2025.

Components of the project would include the following, which are further described below:

- Groups of solar arrays (arrays include PV modules and steel support structures, electrical inverters, transformers, cabling, and other infrastructure);
- An electrical substation;
- A switchyard, including one high-voltage 230 kV utility switchyard, telecommunications infrastructure, and dead-end structures;
- Approximately 3.5 miles of 230 kV generation intertie (gen-tie) transmission line (from the substation and the project 230 kV switchyard) to connect to the existing PG&E Tranquillity Switching Station;
- Improvements to PG&E electrical infrastructure, including a minor expansion of PG&E's Tranquillity Switching Station and approximately 1,900 feet of PG&E 230 kV transmission line to connect the 230 kV gen-tie line to the Tranquillity Switching Station;

- An up to 400 MW energy storage system, consisting of battery or flywheel enclosures and electrical cabling; and
- Other necessary infrastructure, including one permanent operations and maintenance (O&M) building, a septic system and leach field, a supervisory control and data acquisition (SCADA) system, a meteorological data system, buried conduit for electrical wires, overhead collector lines, on-site access roads, a shared busbar, lighting, and wildlife-friendly security fencing.

Project Location

The Project site is located in unincorporated Fresno County, approximately 3.5 miles southwest of the community of Tranquillity and approximately 6.5 miles east of Interstate 5 (I-5). The Project site is located northeast of and adjacent to the Tranquillity Solar Generating Facility, which is currently under construction. The Project site is generally located south of West South Avenue, north of West Dinuba Avenue, east of State Route 33 (SR 33; South Derrick Avenue), and west of South San Mateo Avenue.

Lead Agency

County of Fresno
Department of Public Works and Planning
2220 Tulare Street, 6th Floor
Fresno, California 96721
Contact: Ejaz Ahmad
(559)600-4204

Project Applicant

RE Scarlet LLC

1501 McKinney Street
Unite 1300
Houston, TX 77010
Contact: Kristofer Cheney

Property Owner

RE Scarlet LLC

1501 McKinney Street
Unite 1300
Houston, TX 77010
Contact: Kristofer Cheney

Project Background

The California Renewable Portfolio Standard (RPS) legislation enacted in 2002 (Senate Bill 1078) and accelerated in 2006 required retail sellers of electricity to obtain 20 percent of their supply of electricity from renewable energy sources, such as solar, by 2010. Subsequent

recommendations advocated a goal of 33 percent by 2020, which Governor Arnold Schwarzenegger set as a statewide goal when he signed Executive Order S-14-08. The following year, Executive Order S-21-09 directed the California Air Resources Board, under its Assembly Bill 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020 (California Energy Commission 2014). The 33 percent goal was enacted into law by Governor Brown on April 13, 2011 with his signing of Senate Bill 2X. The California Public Utilities Commission states that the state's investor-owned utilities (including PG&E, Southern California Edison, and San Diego Gas & Electric) collectively served 22.7 percent of their 2013 retail electricity sales with renewable energy sources, and that they have all exceeded the contractual requirements for reaching 33 percent by 2020 (California Public Utility Commission [CPUC] 2016). To set a higher goal, on October 7, 2015, Governor Brown signed Senate Bill 350, known as the Clean Energy and Pollution Reduction Act of 2015, which increased California's RPS to 50 percent by 2030.

Power generated by the Project would be delivered directly via the California Independent System Operator (CAISO) electrical transmission system pursuant to the terms of one or several power purchase agreements.

Components of the Project:

The Scarlet Solar project would be comprised of 4 phases: Phase I, Phase II, Phase III, and Phase IV.

- **Phase I** incorporates 200MW of solar photovoltaic electric generating facilities combined with 40MW / 160MWh of lithium ion battery storage facilities. Project substation equipment related to specific metering of Phase I output is implemented and tested during Phase I construction, including main power transformers and all medium voltage (MV) equipment. Phase I encompasses approximately 1850 acres of land dedicated to solar photovoltaic modules and approximately 3 acres of battery energy storage systems. Phase I began construction in September 2022, and is estimated to complete construction during Q2 2024.
- **Phase II** incorporates 200 MW solar photovoltaic renewable energy generating facilities and 150 MW/ 600 MWh of lithium ion battery storage facilities. Project substation equipment related to specific metering of Phase II output is implemented and tested during Phase II construction, including main power transformers and all medium voltage (MV) equipment. Phase II encompasses approximately 1700 acres of land dedicated to solar photovoltaic modules and approximately 10 acres of battery energy storage systems. Phase II began construction in October 2023 and is expected to complete construction in Q4 2024.
- **Phase III** incorporates 160 MW/ 640 MWh of energy storage facilities. Project substation equipment related to specific metering of Phase III output is implemented and tested during Phase III construction, including main power transformers and all medium voltage (MV) equipment. Phase III encompasses approximately 20 acres of land. Phase III expects to start construction in Q4 2024 and may expect to complete construction in Q4 2025.
- **Phase IV** consists of the facilities that are shared between Phases I-III and the nearby Sonrisa Project. Phase IV includes the gen-tie, switching station, electrical substation, and infrastructure to support efficient operation and maintenance of the site. Phase IV encompasses approximately 95 acres of land. The majority of Phase IV will be completed within the construction timeline of Scarlet I. Phase IV began construction in September 2022 and is expected to complete construction in Q4 2025.

Decommissioning and Restoration Process

The Project is anticipated to have an operating life of up to 35 years. After this period, the facility would be either repowered or decommissioned. Repowering after the operating life is not anticipated at this time; however, if repowering were to be pursued, it would require the owner to obtain all required permit approvals. Project decommissioning would occur in accordance with the expiration of the CUP and would involve the removal of all above-grade facilities, buried electrical conduit, and all concrete foundations in accordance with a Reclamation Plan. Utility-owned infrastructure would not be removed at the time the Solar Facility is decommissioned. Equipment would be repurposed off-site, recycled, or disposed of in a landfill as appropriate. Decommissioning would involve the use of heavy equipment and personnel similar to that used for construction. Appropriate hazardous materials control and erosion control measures would be used throughout the decommissioning process. It is anticipated that such controls would be substantially similar to those implemented during construction.

Similar to the construction of the project, decommissioning of the project will occur in phases. Infrastructure that solely supports Phase I, Phase II, and Phase III will be decommissioned at the end of the useful life of each phase. The decommissioning of each phase's infrastructure could occur independently of the other phase and would not need to be decommissioned in a particular order. All infrastructure that will be shared across phases (Phase IV) as well as across projects (Scarlet Solar Energy Project and proposed Sonrisa Solar Energy Project) will be decommissioned at the end of the last phase that utilizes that infrastructure. In other words, Reclamation of the infrastructure that would be shared across projects will occur within 24 months of either: (i) the later of the expiration of the Sonrisa Solar Energy Project or the Scarlet Solar Energy Project's Conditional Use Permit (CUP) or (ii) the abandonment of both the Sonrisa Solar Energy Project and the Scarlet Solar Energy Project without the project owner making efforts to cure a disruption of electricity production, whichever occurs first.

A Reclamation Plan containing details regarding site reclamation and decommissioning has been approved by Fresno County. The Reclamation Plan will be amended to separate decommissioning activities between the Project phases.

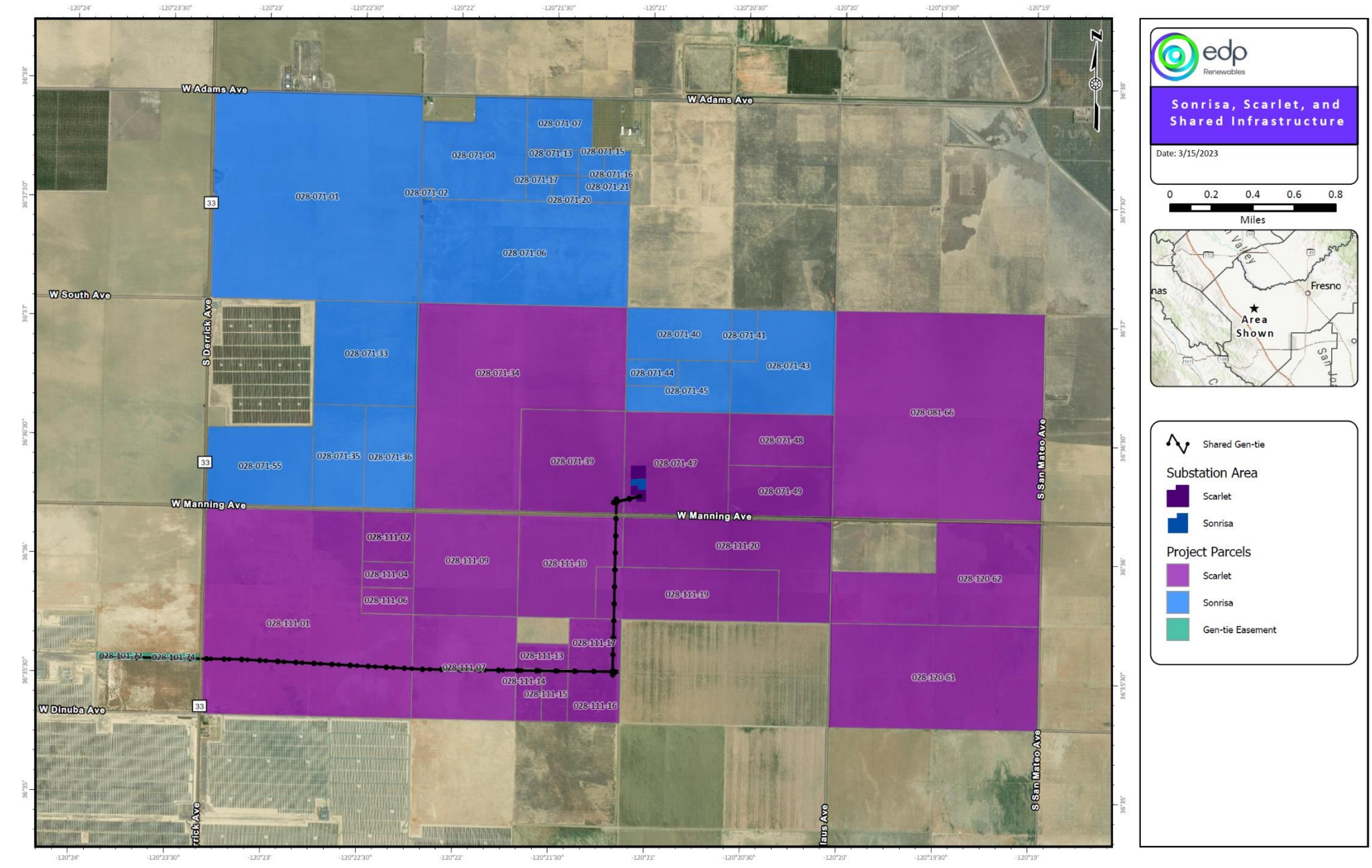


Figure 1: Sonrisa, Scarlet, and Shared Infrastructure

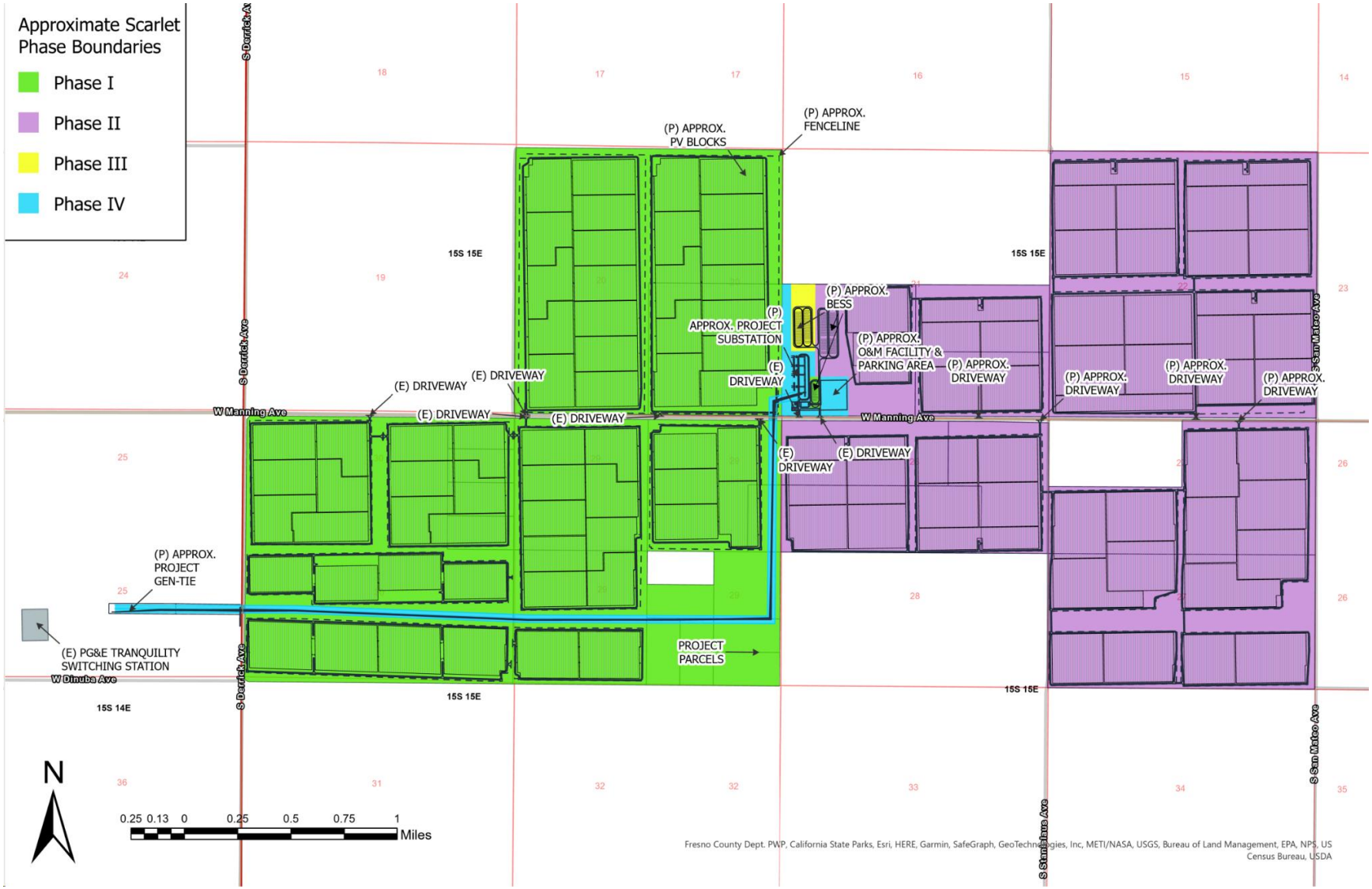


Figure 2: Scarlet Phase I, II, III, and Shared Infrastructure

Project	Old APNs	New APNs
Sonrisa	028-071-01	028-071-01
Sonrisa	028-071-02	028-071-02
Sonrisa	028-071-04	028-071-04
Sonrisa	028-071-06	028-071-06
Sonrisa	028-071-07	028-071-07
Sonrisa	028-071-13	028-071-13
Sonrisa	028-071-15	028-071-15
Sonrisa	028-071-16	028-071-16
Sonrisa	028-071-17	028-071-17
Sonrisa	028-071-20	028-071-20
Sonrisa	028-071-21	028-071-21
Sonrisa	028-071-33	028-071-33
Scarlet	028-071-34	
Scarlet	028-071-39	028-071-56
Sonrisa	028-071-35	028-071-35
Sonrisa	028-071-36	028-071-36
Sonrisa	028-071-40	028-071-40
Sonrisa	028-071-41	028-071-41
Sonrisa	028-071-43	028-071-43
Sonrisa	028-071-44	028-071-44
Sonrisa	028-071-45	028-071-45
Scarlet	028-071-47	028-071-47
Scarlet	028-071-48	028-071-48
Scarlet	028-071-49	028-071-49
Sonrisa	028-071-55	028-071-55
Scarlet	028-081-66	028-081-66
Gen-tie Easement	028-101-72	028-101-72
Gen-tie Easement	028-101-74	028-101-74
Scarlet	028-111-01	
Scarlet	028-111-02	
Scarlet	028-111-04	
Scarlet	028-111-06	
Scarlet	028-111-07	
Scarlet	028-111-09	
Scarlet	028-111-10	
Scarlet	028-111-19	028-111-71
Scarlet	028-111-13	
Scarlet	028-111-14	
Scarlet	028-111-15	
Scarlet	028-111-16	
Scarlet	028-111-17	028-111-72
Scarlet	028-111-20	028-111-20
Scarlet	028-120-61	028-120-61

Scarlet	028-120-62	028-120-62

Fresno County Recorder
Paul Dictos, CPA
2021-0161201
Recorded at the request of:
SIMPLIFILE, PROVO
10/01/2021 02:29 10
Titles: 1 Pages: 29
Fees: $95.00
CA SB2 Fees:$0.00
Taxes: $33651.75
Total: $33746.75

AFTER RECORDED RETURN TO:

RE Scarlet LLC
c/o EDP Renewables North America LLC
P.O. Box 3827
Houston, Texas 77253
Attn: General Counsel

(Above Space For Recorder's Use Only)

APN: 028-111-01S, 028-111-02S, 028-111-04S, 028-111-06, 028-111-09S, 028-111-10, 028-111-07S, 028-111-13, 028-111-14, 028-111-15, 028-111-16S, 028-111-17, 028-111-19, 028-111-20, 028-071-39S, 028-071-34, 028-071-47, 028-071-45, 028-071-44, 028-071-40S, 028-071-49, 028-071-48, 028-071-43, 028-071-41, 028-081-66S, 028-120-62S, 028-120-61S

THE UNDERSIGNED GRANTOR(s) DECLARE(s)
DOCUMENTARY TRANSFER TAX is $33,651.75 CITY TAX $0.00
_x_ computed on full value of property conveyed; or
___ computed on full value let less value of liens or encumbrances remaining at time of sale.
_x_ Unincorporated area: ___ City of _____,

GRANT DEED

FOR GOOD AND VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Westlands Water District, a California water district ("Grantor"), hereby grants to RE Scarlet LLC ("Grantee"), that certain real property (the "Property") located in the County of Fresno, State of California, more particularly described in Exhibit A attached hereto and incorporated herein by reference, together with (a) all rights, privileges and easements appurtenant to the Property, as well as all development rights, air rights, and any rights-of-way or other appurtenances used in connection with the beneficial use and enjoyment of the Property and (b) all improvements and fixtures located on the Property (but excluding items owned by Grantor in the nature of public utility facilities).

EXCEPTING THEREFROM and reserving unto Grantor all minerals, oil, gas and other hydrocarbon substances below a depth of 500' from the surface; provided however, except for the seven designated 1-acre drill site locations described on Exhibit B attached hereto (the "Drill Sites"), such reservation shall not include any right of surface entry to the Property or the upper 500' from the surface of the Property or any right to otherwise interfere with Grantee's use of the surface of the Property.

ALSO RESERVING UNTO GRANTOR a non-exclusive right to use the Drill Sites to explore, develop, operate, produce or maintain any oil and gas and/or groundwater wells and facilities related thereto, along with the right to access the Drill Sites from adjoining roads. Such reservation of Drill Sites shall not include any right of surface entry to the Property outside of the Drill Sites or the upper 500' from the surface of the Property outside of the Drill Sites or any right to otherwise interfere with Grantee's use of the surface of the Property outside of the

Drill Sites.

ALSO RESERVING UNTO GRANTOR, the exclusive, permanent right to all surface water allocations and similar entitlements appurtenant to or associated with the Property, including without limitation the right to apply for and receive from Grantor or its successors a ratable allocation of water under California Water Code Section 35420 or any successor statute, but without any surface access rights to the Property.

ALSO RESERVING UNTO THE GRANTOR the exclusive, permanent right to any groundwater underlying or otherwise appurtenant to or associated with the Property, but without any surface access rights to the Property. Notwithstanding the foregoing, Grantee shall have the right to use such groundwater as may be required for the construction and ongoing maintenance, repair and replacement of any solar power generation facilities to be located on the Property, specifically including the right to drill a water well to provide water to Grantee's substation and operations and maintenance building(s) to be located on the Property, subject to any duly promulgated regulations of general applicability by any Groundwater Sustainability Agency or similar agency (including Grantor acting in such capacity). Notwithstanding the foregoing, Grantee shall have the right to pump up to one (1) acre-foot per year of groundwater per each one hundred sixty (160) acres of Property for operation and maintenance, and up to one hundred and fifty (150) acre-feet per year of groundwater per three hundred twenty (320) acres of Property during construction on the Property.

FURTHER RESERVING UNTO TO GRANTOR the exclusive, permanent right to maintain, cause, permit, create, or allow the presence of subsurface water underlying the Property, and the permanent right, in their sole discretion, to provide drainage or not provide drainage of the subsurface water underlying the Property, but without any surface access rights to the Property.

The Property is conveyed subject to the following covenant and restriction, which is hereby reserved by Grantor and imposed on Grantee and all future owners of the Property for the benefit of Grantor and its landowners and water users: Grantee shall not irrigate or apply water to the Property for agricultural purposes.

IN WITNESS WHEREOF, Grantor has caused its duly authorized representative to execute this instrument as of the date hereinafter written.

DATED: September 29, 2021

WESTLANDS WATER DISTRICT,
a California water district

By: 
Name: Jose L. Gutierrez
Title: Chief Operating Officer

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF ~~Fresno~~ California)

)§

COUNTY OF Fresno)

On September 29, 2021, before me, Lyvia Nguyen, a Notary Public, personally appeared Jose L. Gutierrez, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

(Affix seal here)

LYVIA NGUYEN
Notary Public – California
Fresno County
Commission # 2230226
My Comm. Expires Feb 3, 2022

L. N. Nguyen

Signature of Notary

EXIHBIT A

Legal Description

PARCEL 1:

THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE EAST HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER THEREOF.

ALSO EXCEPTING THEREFROM THE NORTH 50 FEET OF THE NORTHEAST QUARTER DEEDED TO THE COUNTY OF FRESNO BY DEED RECORDED DECEMBER 16, 1994, AS DOCUMENT NO. 94189224 OF OFFICIAL RECORDS.

APN: 028-111-10

PARCEL 2:

THE SOUTHWEST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM 50% OF ALL OIL, GAS AND MINERALS, AS RESERVED IN THE DEED FROM HOWARD A. BROWN, AS TRUSTEE FOR MATTIE L. BROWN TO JAMES J. IMPERATRICE AND EVELYN IMPERATRICE, HUSBAND AND WIFE, RECORDED FEBRUARY 26, 1957 IN BOOK 3889, PAGE 368 OF OFFICIAL RECORDS, DOCUMENT NO. 14291.

ALSO EXCEPTING THEREFROM ONE-HALF OF ALL OIL, GAS AND OTHER HYDROCARBONS AND MINERALS NOW OR AT ANY TIME HEREAFTER SITUATE THEREIN AND THEREUNDER, AS RESERVED IN THE DEED DATED APRIL 29, 1959, FROM J. J. IMPERATRICE, ALSO KNOWN AS JAMES J. IMPERATRICE AND EVELYN IMPERATRICE, HUSBAND AND WIFE TO FRANCIS ORFF AND ANGIE ORFF, HUSBAND AND WIFE, AS JOINT TENANTS, RECORDED JULY 21, 1959 IN BOOK 4250, PAGE 484 OF OFFICIAL RECORDS, DOCUMENT NO. 50988.

APN: 028-111-07

PARCEL 3:

THE NORTHWEST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15, EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF;

EXCEPTING THEREFROM THE NORTH 50 FEET THEREOF;

ALSO EXCEPTING THEREFROM ONE-HALF OF ALL OIL, GAS, HYDROCARBON

SUBSTANCES AND OTHER MINERALS IN, OR UNDER SAID LAND, WITH THE RIGHT OF ENTRY FOR THE PURPOSES OF EXPLORING FOR, DRILLING, MARKETING OR REMOVING SUCH SUBSTANCES; AS RESERVED IN THAT CERTAIN DEED DATED JULY 15, 1965, EXECUTED BY ELKINS RANCH COMPANY, A CORPORATION, RECORDED JULY 29, 1965 AS DOCUMENT NO. 61068 IN BOOK 5198, PAGE 448 OF OFFICIAL RECORDS.

AND ALSO EXCEPTING THEREFROM ALL OF GRANTOR'S RIGHT, TITLE AND INTEREST IN AND TO ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, AS RESERVED IN THE DEED RECORDED JULY 29, 1999 AS DOCUMENT NO. 1999-0111572, OFFICIAL RECORDS.

APN: 028-111-09

PARCEL 4:

THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE FRACTIONAL SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF;

EXCEPTING THEREFROM ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES WITHIN OR UNDERLYING SAID LAND, AS RESERVED IN THE DEED FROM HELEN RORDEN MAUPIN, FORMERLY HELEN RORDEN GOW, RECORDED MAY 05, 1966, AS DOCUMENT NO. 34691, OFFICIAL RECORDS.

APN: PORTION OF 028-111-02

PARCEL 5:

THE NORTH HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF FRACTIONAL SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF;

EXCEPTING THEREFROM THE NORTH 50 FEET THEREOF;

ALSO EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, TOGETHER WITH THE RIGHT BY THE GRANTORS OR THEIR LESSEES TO GO UPON SAID PROPERTY AT ANY TIME HEREAFTER FOR THE PURPOSES OF DEVELOPING AND EXTRACTING OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES FROM SAID LAND; AS RESERVED IN THE DEED FROM H. C. REECE, ALSO KNOWN AS HERMAN C. REECE AND IRENE REECE, HUSBAND AND WIFE, RECORDED JUNE 13, 1974, AS DOCUMENT NO. 44499, IN BOOK 6311, PAGE 673 OF OFFICIAL RECORDS.

APN: PORTION OF 028-111-02

PARCEL 6:

THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF;

EXCEPTING THEREFROM ONE-HALF OF ALL MINERAL RIGHTS IN AND UNDER SAID LAND, AS RESERVED IN THE DEED FROM JAY THEODORE RUSMORE TO H. C. REECE AND IRENE REECE, HUSBAND AND WIFE, DATED DECEMBER 05, 1969, RECORDED DECEMBER 24, 1969, AS DOCUMENT NO. 97041, IN BOOK 5746, PAGE 146 OF OFFICIAL RECORDS;

ALSO EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, TOGETHER WITH THE RIGHT BY THE GRANTORS OR THEIR LESSEES TO GO UPON SAID PROPERTY AT ANY TIME HEREAFTER FOR THE PURPOSES OF DEVELOPING AND EXTRACTING OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES FROM SAID LAND; AS RESERVED IN THE DEED FROM H. C. REECE, ALSO KNOWN AS HERMAN C. REECE AND IRENE REECE, HUSBAND AND WIFE, RECORDED JUNE 13, 1974, AS DOCUMENT NO. 44499, IN BOOK 6311, PAGE 673 OF OFFICIAL RECORDS.

APN: 028-111-04

PARCEL 7:

ALL OF SECTION 20, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE SOUTHEAST QUARTER OF SAID SECTION 20.

ALSO EXCEPTING THEREFROM THE SOUTH 50 FEET OF SAID SECTION 20.

APN: 028-071-34

PARCEL 8:

THE SOUTHEAST QUARTER OF SECTION 20, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT THE SOUTH 50 FEET THEREOF AS GRANTED TO THE COUNTY OF FRESNO.

APN: 028-071-39

PARCEL 9:

FRACTIONAL SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF;

EXCEPTING THEREFROM THE EAST 1/2 OF THE NORTHEAST 1/4;

ALSO EXCEPTING THEREFROM THAT PORTION OF THE WEST 1/2 OF SAID SECTION 30 AS CONVEYED TO THE STATE OF CALIFORNIA IN THE DEED RECORDED FEBRUARY 05, 1960 IN BOOK 4339, PAGE 272 AS DOCUMENT NO. 9195 OF OFFICIAL RECORDS, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SECTION, SAID SOUTHWEST CORNER BEING AT COORDINATES Y=460,000.220 FEET AND X=1592578.160 FEET; THENCE (1) ALONG THE WEST LINE OF SAID SECTION, NORTH 01° 18' 31" EAST, 5307.60 FEET TO THE NORTH LINE OF SAID SECTION; THENCE (2) ALONG SAID NORTH LINE, SOUTH 88° 37' 37" EAST, 141.64 FEET; THENCE (3) SOUTH 61° 18' 31" WEST, 82.72 FEET TO THE EAST LINE OF THE WEST 70 FEET OF SAID SECTION; THENCE (4) ALONG SAID EAST LINE, SOUTH 01° 18' 31" WEST, 5224.71 FEET; THENCE (5) SOUTH 58° 41' 29" EAST, 82.72 FEET TO THE SOUTH LINE OF SAID SECTION; THENCE (6) ALONG SAID SOUTH LINE, NORTH 88° 41' 39" WEST, 141.64 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE COUNTY OF FRESNO BY DEEDS RECORDED JULY 22, 1966 IN BOOK 5339, PAGES 404 THROUGH 407 AND 408 THROUGH 410, AS DOCUMENT NOS. 54601 AND 54602 OF OFFICIAL RECORDS, DESCRIBED AS FOLLOWS:

THE NORTH 50 FEET OF SAID SECTION 30, EXCEPTING THEREFROM THE NORTHEAST 1/4 OF THE NORTHEAST 1/4; ALSO EXCEPTING THEREFROM THE FOLLOWING:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 30, SAID NORTHWEST CORNER BEING AT COORDINATES Y=465306.068 AND X=1592699.352 FEET; THENCE (1) EASTERLY, ALONG THE NORTH LINE OF SAID SECTION 30, SOUTH 88° 37' 37" EAST, A DISTANCE OF 141.64 FEET; THENCE (2) SOUTHWESTERLY, SOUTH 61° 18' 31" WEST, A DISTANCE OF 82.72 FEET; THENCE (3) SOUTHERLY, SOUTH 01° 18' 31' WEST, A DISTANCE OF 8.56 FEET; THENCE (4) WESTERLY, NORTH 88° 37' 37" WEST, A DISTANCE OF 70 FEET; THENCE (5) NORTHERLY, ALONG THE WEST LINE OF SAID SECTION 30, NORTH 01° 18' 31" EAST, A DISTANCE OF 50 FEET TO THE POINT OF BEGINNING.

AND ALSO EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE COUNTY OF FRESNO BY DEED RECORDED JUNE 01, 1994 AS DOCUMENT NO. 94091739 OF OFFICIAL RECORDS, AND DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 30; THENCE EASTERLY ALONG THE NORTH LINE OF SAID SECTION, SOUTH 88° 38' 32" EAST, 141.64 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF STATE ROUTE 33 (DERRICK AVENUE); THENCE SOUTH 01° 18' 10" WEST, 50.00 FEET, TO A POINT ON A LINE 50 FEET SOUTHERLY OF AND PARALLEL TO THE NORTH LINE OF SAID SECTION, SAID POINT BEING THE TRUE POINT OF BEGINNING; THENCE SOUTH 46° 18' 10" WEST, 101.31 FEET TO A POINT ON A LINE 70 FEET EASTERLY OF AND PARALLEL TO THE WEST LINE OF SAID SECTION, SAID LINE ALSO BEING THE EAST RIGHT-OF-WAY LINE OF STATE ROUTE 33 (DERRICK AVENUE); THENCE ALONG SAID RIGHT-OF-WAY LINE, NORTH 01° 18' 10" EAST, 71.71 FEET; THENCE ALONG A LINE 50 FEET SOUTHERLY OF AND PARALLEL TO THE NORTH LINE OF SAID SECTION, SOUTH 88° 38' 32" EAST, 71.64 FEET, TO THE TRUE POINT OF BEGINNING.

APN:028-111-01

PARCEL 10:

THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN: 028-111-06

PARCEL 11:

THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN GRANT DEED RECORDED JANUARY 2, 2004 AS INSTRUMENT NO. 2004-0000205 OF OFFICIAL RECORDS.

APN: 028-071-48

PARCEL 12:

THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE SOUTH 50 FEET OF SAID SOUTHEAST QUARTER.

EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN GRANT DEED RECORDED JANUARY 2, 2004 AS INSTRUMENT NO. 2004-0000205 OF OFFICIAL RECORDS.

APN: 028-071-49

PARCEL 13:

THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER AND THE SOUTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN GRANT DEED RECORDED JANUARY 2, 2004 AS INSTRUMENT NO. 2004-0000205 OF OFFICIAL RECORDS.

APN: 028-071-45

PARCEL 14:

THE NORTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN GRANT DEED RECORDED JANUARY 2, 2004 AS INSTRUMENT NO. 2004-0000205 OF OFFICIAL RECORDS.

APN: 028-071-44

PARCEL 15:

THE SOUTHWEST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE SOUTH 50 FEET OF SAID SOUTHWEST QUARTER.

EXCEPTING THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES AS RESERVED IN GRANT DEED RECORDED JANUARY 2, 2004 AS INSTRUMENT NO. 2004-0000205 OF OFFICIAL RECORDS.

APN: 028-071-47

PARCEL 16:

THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ONE-HALF OF ALL OIL, GAS, MINERALS, HYDROCARBONS AND OTHER SIMILAR RIGHTS BELOW A DEPTH OF 500 FEET MEASURED FROM THE SURFACE OF SAID REAL PROPERTY BUT WITHOUT THE RIGHT OF ENTRY UPON OR THROUGH THE SURFACE OF THE REAL PROPERTY OR THE UPPER 500 FEET THEREOF, AS RESERVED BY MARILYN ABADIE, A SINGLE WOMAN AND EDMOND E. ABADIE, JR. A SINGLE MAN IN THE DEED TO ROBERT G. KARCHER AND CATHERINE P. KARCHER, HUSBAND AND WIFE, AS JOINT TENANTS AND JOSEPH P. LILLES, JR. AND CAROLYN I. LILLES, HUSBAND AND WIFE, AS JOINT TENANTS, ALL AS TENANTS IN COMMON, RECORDED JULY 14, 1982 IN BOOK 7938, PAGE 140 AS DOCUMENT NO. 58437, OFFICIAL RECORDS AND RERECORDED NOVEMBER 14, 1983 AS DOCUMENT NO. 83105601, OFFICIAL RECORDS.

APN: 028-071-40

PARCEL 17:

THE EAST HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE UNITED STATES GOVERNMENT TOWNSHIP PLAT APPROVED BY THE SURVEYOR GENERAL ON JANUARY 31, 1855.

APN: PORTION OF 028-111-19

PARCEL 18:

THE SOUTH HALF OF THE NORTHWEST QUARTER AND THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE UNITED STATES GOVERNMENT TOWNSHIP PLAT APPROVED BY THE SURVEYOR GENERAL ON JANUARY 31, 1855.

APN: PORTION OF 028-111-19

PARCEL 19:

THE EAST HALF OF THE NORTHEAST QUARTER AND THE EAST HALF OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE FOLLOWING DESCRIBED PARCEL OF LAND:

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 28; THENCE (1) WESTERLY ALONG THE NORTH BOUNDARY OF SAID SECTION 28 TO THE NORTHWEST CORNER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 28; THENCE (2) SOUTHERLY ALONG THE WEST BOUNDARY OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TO A POINT 50 FEET SOUTH OF THE NORTH BOUNDARY OF SAID SECTION 28 (MEASURED AT RIGHT ANGLES); THENCE (3) EASTERLY, PARALLEL WITH SAID NORTH BOUNDARY TO A POINT WHICH IS 1120.31 FEET WESTERLY OF THE NORTHEAST CORNER OF SAID SECTION 28, (MEASURED ALONG SAID NORTH BOUNDARY), THENCE (4) SOUTHEASTERLY TO A POINT ON THE EAST BOUNDARY OF SAID SECTION 28, SAID POINT BEING 66 FEET SOUTH OF THE NORTH BOUNDARY OF SAID SECTION 28; THENCE (5) NORTHERLY ALONG SAID EAST BOUNDARY TO THE NORTHEAST CORNER OF SAID SECTION 28; THE POINT OF BEGINNING.

ALSO EXCEPT ALL OIL, GAS AND ASPHALTUM AND OTHER CARBON SUBSTANCES AND MINERAL RIGHTS OF WHATSOEVER KIND AND CHARACTER IN AND TO OR UNDER SAID REAL PROPERTY, TOGETHER WITH THE RIGHT TO ENTER UPON SAID PROPERTY AND TO USE THE SAME FOR THE PURPOSE OF EXPLORING AND DEVELOPING AND REMOVING THEREFROM ALL SAID GAS, OIL, ASPHALTUM AND OTHER CARBON SUBSTANCES AND

OTHER MINERALS OF EVERY KIND AND CHARACTER, AN UNDIVIDED ONE-HALF INTEREST THEREOF BEING RESERVED IN THE DEED FROM HOTCHKISS ESTATE COMPANY, A CORPORATION, TO D. J. CANTY ESTATE, A CORPORATION, DATED DECEMBER 30, 1947 FILED FOR RECORD JANUARY 19, 1948 AS DOCUMENT NO. 2679 IN BOOK 2612, PAGE 1 OF OFFICIAL RECORDS, AND AN UNDIVIDED ONE-HALF INTEREST BEING RESERVED IN THE DEED FROM D. J. CANTY ESTATE, A CORPORATION, TO H. C. REECE AND TOM REECE, DATED JANUARY 20, 1948 FILED FOR RECORD MAY 19, 1948 AS DOCUMENT NO. 24532 IN BOOK 2644, PAGE 214 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM UNTO THE GRANTORS HEREIN ALL REMAINING OIL, GAS, ASPHALTUM AND OTHER CARBON SUBSTANCES AND MINERAL RIGHTS OF WHATSOEVER KIND AND CHARACTER IN AND TO OR UNDER THE PROPERTY DESCRIBED AS RESERVED BY H. C. REECE, ET UX, IN DEED RECORDED FEBRUARY 14, 1986 AS DOCUMENT NO. 86015999 OF OFFICIAL RECORDS.

APN: PORTION OF 028-111-20

PARCEL 20:

THE WEST HALF OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 28, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THE NORTH 50 FEET THEREOF.

ALSO EXCEPTING THEREFROM UNTO THE GRANTORS HEREIN ALL REMAINING OIL, GAS, ASPHALTUM AND OTHER CARBON SUBSTANCES AND MINERAL RIGHTS OF WHATSOEVER KIND AND CHARACTER IN AND TO OR UNDER THE PROPERTY DESCRIBED AS RESERVED BY H. C. REECE, ET UX, IN DEED RECORDED FEBRUARY 14, 1986 AS DOCUMENT NO. 86015999 OF OFFICIAL RECORDS.

APN: PORTION OF 028-111-20

PARCEL 21:

THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM AN UNDIVIDED 1/2 INTEREST IN AND TO ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES WITHIN OR UNDERLYING SAID LAND, AS RESERVED IN THE DEED FROM PAUL C. KRUZ, ET UX, RECORDED SEPTEMBER 17, 1965 AS DOCUMENT NO. 74954 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM UNTO THE GRANTORS HEREIN ALL REMAINING OIL, GAS, ASPHALTUM AND OTHER CARBON SUBSTANCES AND MINERAL RIGHTS OF

WHATSOEVER KIND AND CHARACTER IN AND TO OR UNDER THE PROPERTY DESCRIBED AS RESERVED BY H. C. REECE, ET UX, IN DEED RECORDED FEBRUARY 14, 1986 AS DOCUMENT NO. 86015999 OF OFFICIAL RECORDS.

APN: PORTION OF 028-111-16

PARCEL 22:

THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ONE-HALF OF ALL OIL, GAS AND MINERALS AS EXCEPTED AND RESERVED IN THE DEED FROM HAROLD B. HOWARD, A WIDOWER TO H. C. REECE AND IRENE REECE, HUSBAND AND WIFE, AS JOINT TENANTS, DATED FEBRUARY 08, 1960 AND RECORDED MARCH 03, 1960 IN BOOK 4353, PAGE 182, DOCUMENT NO. 16402, OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM UNTO THE GRANTORS HEREIN ALL REMAINING OIL, GAS, ASPHALTUM AND OTHER CARBON SUBSTANCES AND AMORAL RIGHTS OF WHATSOEVER KIND AND CHARACTER IN AND TO OR UNDER THE PROPERTY DESCRIBED AS RESERVED BY H. C. REECE, ET UX, IN DEED RECORDED FEBRUARY 14, 1986 AS DOCUMENT NO. 86015999 OF OFFICIAL RECORDS.

APN: PORTION OF 028-111-16

PARCEL 23:

THE SOUTH HALF OF THE NORTHEAST QUARTER; THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER; AND THE EAST HALF OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN: 028-071-43

PARCEL 24:

THE WEST HALF OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPT AN UNDIVIDED 1/4 INTEREST IN AND TO ALL MINERALS, OIL, GAS AND PETROLEUM AND ALL KINDRED SUBSTANCES WITHIN OR UNDERLYING SAID LAND, RESERVED BY IDA F. MITCHELL, IN DEED RECORDED SEPTEMBER 08, 1947, AS DOCUMENT NO. 46454 IN BOOK 2557, PAGE 309 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM ALL MINERALS, OIL AND GAS AND PETROLEUM AND ALL

KINDRED SUBSTANCES WITHIN OR UNDERLYING SAID LAND, TOGETHER WITH THE RIGHT TO ENTER UPON SAID LAND FOR THE PURPOSE OF EXPLORING FOR AND/OR DRILLING FOR AND/OR MINING FOR AND/OR TAKING ANY OR ALL OF SAID SUNSTANCES, AND THE RIGHT TO MINE AND/OR DRILL ON SAID LAND FOR SAID SUBSTANCES OR ANY OR EITHER OF THEM, AND THE RIGHT TO TAKE SAID SUBSTANCES, OR EITHER OR ANY OF THEM FROM SAID LAND AS EXCEPTED IN QUITCLAIM DEED RECORDED MAY 29, 1974 AS INSTRUMENT NO. 40341 IN BOOK 6305, PAGE 907 OF OFFICIAL RECORDS.

APN: 028-071-41

PARCEL 25:

ALL OF SECTION 22, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF;

EXCEPTING THEREFROM AN UNDIVIDED ONE-HALF OF ALL OF THE OIL, GAS AND OTHER HYDROCARBONS IN AND UNDER SAID LAND OR PRODUCED OR SAVED THEREFROM; TOGETHER WITH THE RIGHT AND POWER IN GRANTORS, THEIR SUCCESSORS OR ASSIGNS, IN PERSON OR THROUGH THE AGENCY OF ANY LESSEE, OPERATOR, INDEPENDENT CONTRACTOR OR OTHERWISE, TO MINE FOR, DRILL FOR, PRODUCE, EXTRACT, TAKE AND REMOVE AN UNDIVIDED ONE-HALF OF ALL OF SAID SUBSTANCES (AND WATER FOR GRANTORS' SAID OPERATIONS ON SAID LAND) FROM, AND TO STORE THE SAME UPON, THE SAID LAND WITH THE RIGHT OF ENTRY THEREON AT ALL TIMES FOR SAID PURPOSES; TOGETHER WITH THE RIGHT TO MINE OR DRILL WELLS THEREON, FOR SAID PURPOSES AND TO CONSTRUCT, ERECT, MAINTAIN, OPERATE, USE, REPAIR AND REPLACE THEREON AND REMOVE THEREFROM ALL PIPELINES, TELEPHONE AND TELEGRAPH LINES, DERRICKS, TANKS, MACHINERY, BUILDINGS AND OTHER STRUCTURES WHICH GRANTORS, THEIR SUCCESSORS OR ASSIGNS, MAY DESIRE IN CARRYING ON ANY SUCH OPERATION, INCLUDING ALL RIGHTS NECESSARY OR CONVENIENT THERETO, TOGETHER WITH THE RIGHTS OF WAY FOR PASSAGE OVER, UPON AND ACROSS, AND INGRESS AND EGRESS TO AND FROM SAID LAND FOR SUCH PURPOSES, AS RESERVED IN THE DEED FROM JOHN B. JAGO, ET AL, DATED DECEMBER 24, 1946, RECORDED FEBRUARY 03, 1947 AS DOCUMENT NO. 6655 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE COUNTY OF FRESNO BY DEED RECORDED JULY 28, 1966 IN BOOK 5341, PAGE 497 AS DOCUMENT NO. 55947 OF OFFICIAL RECORDS.

AND ALSO EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE COUNTY OF FRESNO BY DEED RECORDED JANUARY 06, 1995 AS DOCUMENT NO. 95002091 OF OFFICIAL RECORDS.

AND ALSO EXCEPTING THEREFROM ALL OF GRANTOR'S RIGHT, TITLE AND INTEREST IN AND TO ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, AS RESERVED IN THE DEED RECORDED JULY 29, 1999, AS DOCUMENT NO. 1999-0111576 OF OFFICIAL RECORDS.

APN: 028-081-66

PARCEL 26:

THE NORTHEAST QUARTER AND THE SOUTH HALF OF THE NORTHWEST QUARTER OF SECTION 27, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OF THE MINERALS AND MINERAL ORES OF EVERY KIND AND CHARACTER NOW KNOWN TO EXIST OR HEREAFTER DISCOVERED UPON, WITHIN OR UNDERLYING THE HEREINABOVE DESCRIBED PROPERTY OR THAT MAY BE PRODUCED THEREFROM, INCLUDING, WITHOUT LIMITED THE GENERALITY OF THE FOREGOING, ALL OIL, NATURAL GAS AND HYDROCARBON SUBSTANCES, GEOTHERMAL STEAM, BRINES AND MINERALS IN SOLUTION, AND SAND, GRAVEL AND AGGREGATES, AND PRODUCTS DERIVED THEREFROM, AS GRANTED TO BRAVO OIL COMPANY IN DEED RECORDED DECEMBER 29, 1965, AS DOCUMENT NO. 104217 OF OFFICIAL RECORDS.

APN: 028-120-62

PARCEL 27:

THE SOUTH HALF OF SECTION 27, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OF THE MINERALS AND MINERAL ORES OF EVERY KIND AND CHARACTER NOW KNOWN TO EXIST OR HEREAFTER DISCOVERED UPON, WITHIN OR UNDERLYING THE HEREINABOVE DESCRIBED PROPERTY OR THAT MAY BE PRODUCED THEREFROM, INCLUDING, WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ALL OIL, NATURAL GAS AND HYDROCARBON SUBSTANCES, GEOTHERMAL STEAM, BRINES AND MINERALS IN SOLUTION, AND SAND, GRAVEL AND AGGREGATES, AND PRODUCTS DERIVED THEREFROM, AS GRANTED TO BRAVO OIL COMPANY IN DEED RECORDED DECEMBER 29, 1965, AS DOCUMENT NO. 104217 OF OFFICIAL RECORDS.

APN: 028-120-61

PARCEL 28:

THE SOUTH HALF OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN: 028-111-13

PARCEL 29:

THE EAST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF

SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN: 028-111-15

PARCEL 30:

THE WEST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ALL OF GRANTOR'S RIGHT, TITLE AND INTEREST IN AND TO ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, AS RESERVED BY MARY G. PICKFORD TABERSKI, IN DEED RECORDED JANUARY 20, 2004 AS DOCUMENT NO. 2004-0013261, OFFICIAL RECORDS.

APN: 028-111-14

PARCEL 31:

THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

APN: 028-111-17

DRILL PAD SITE
Section 20
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

EXHIBIT "B"

METES AND BOUNDS DESCRIPTIONS FOR ONE (1) ACRE DRILL PAD SITES WESTLANDS WATER DISTRICT

BEING METES AND BOUNDS DESCRIPTIONS FOR TWO (2) ONE (1.00) ACRE DRILL PAD SITES, LOCATED IN SECTION 20, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID DRILL PAD SITES BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

Part 1 Exhibit B-1

BEGINNING at a 4-inch iron disc, illegible, found at the northwest corner of said Section 20, for the **POINT OF BEGINNING** and northwest corner of the drill pad site described herein;

THENCE, South 88°41'05" East, along the north line of said Section 20, same being the north line of the drill pad site described herein, a distance of 208.72 feet to a calculated point on the north line of said Section 20, for the northeast corner of the drill pad site described herein, from which a 3/4-inch iron rod, with no cap found at the northeast corner of said Section 20, bears South 88°41'05" East, a distance of 5,102.48 feet;

THENCE, over and across said Section 20 the following two (2) courses and distances:

1) South 01°06'40" West, a distance of 208.72 feet to a calculated point for the southeast corner of the drill pad site described herein, and

2) North 88°41'10" West, a distance of 208.72 feet to a calculated point on the west line of said Section 20, for the southwest corner of the drill pad site described herein;

THENCE, North 01°06'40" West along the west line of said Section 20, same being the west line of the drill pad site described herein, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Part 2 Exhibit B-2

COMMENCING at a 4-inch iron disc, illegible, found at the northwest corner of said Section 20,

THENCE South 01°07'34" West, with the west line of said Section 20, a distance of 5,044.84 feet to a calculated point on said west line, for the **POINT OF BEGINNING** and northwest corner of the drill pad site described herein;

THENCE, over and across said Section 20 the following two (2) courses and distances:

1) South 88°41'44" East, a distance of 208.72 feet to a calculated point for the northeast corner of the drill pad site described herein, and

2) South 01°08'33" West, a distance of 208.72 feet to a calculated point on the south line of said Section 20, same being the north right-of-way line of West Manning Avenue,

Continued on page 2 of 4

DRILL PAD SITE
Section 20
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

THENCE, North 88°41'44" West with the south line of said Section 20, same being the north right-of-way line of said West Manning Avenue, a distance of 208.72 feet to a calculated point on the west line of said Section 20, same being on the north right-of-way line of said West Manning Avenue, for the southwest corner of the drill pad site described herein, from which a 3-inch brass disc in a range box found at the southwest corner of said Section 20, same being within the right-of-way of said West Manning Avenue, bears South 01°08"33" West a distance of 50.00 feet;

THENCE, North 01°08'33" East along west line of said Section 20, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Notes:

1) For additional information, see attached sketch (Exhibit B-1 & B-2) made in conjunction with and considered an integral part of the above described easement.
2) Bearings shown hereon are grid bearings of the California State Plane System, Zone Distances shown hereon are surface.
3) This description and the attached sketch (Exhibit B-1 & B-2) were prepared for the purposes of creating a drill pad site area and are not intended for use as a property boundary survey.
4) Record information shown hereon is based upon a public records search performed by First American Title Insurance Company. Owner name shown as provided. Record information noted per title report provided.
5) Date of Survey: 08/03/2021

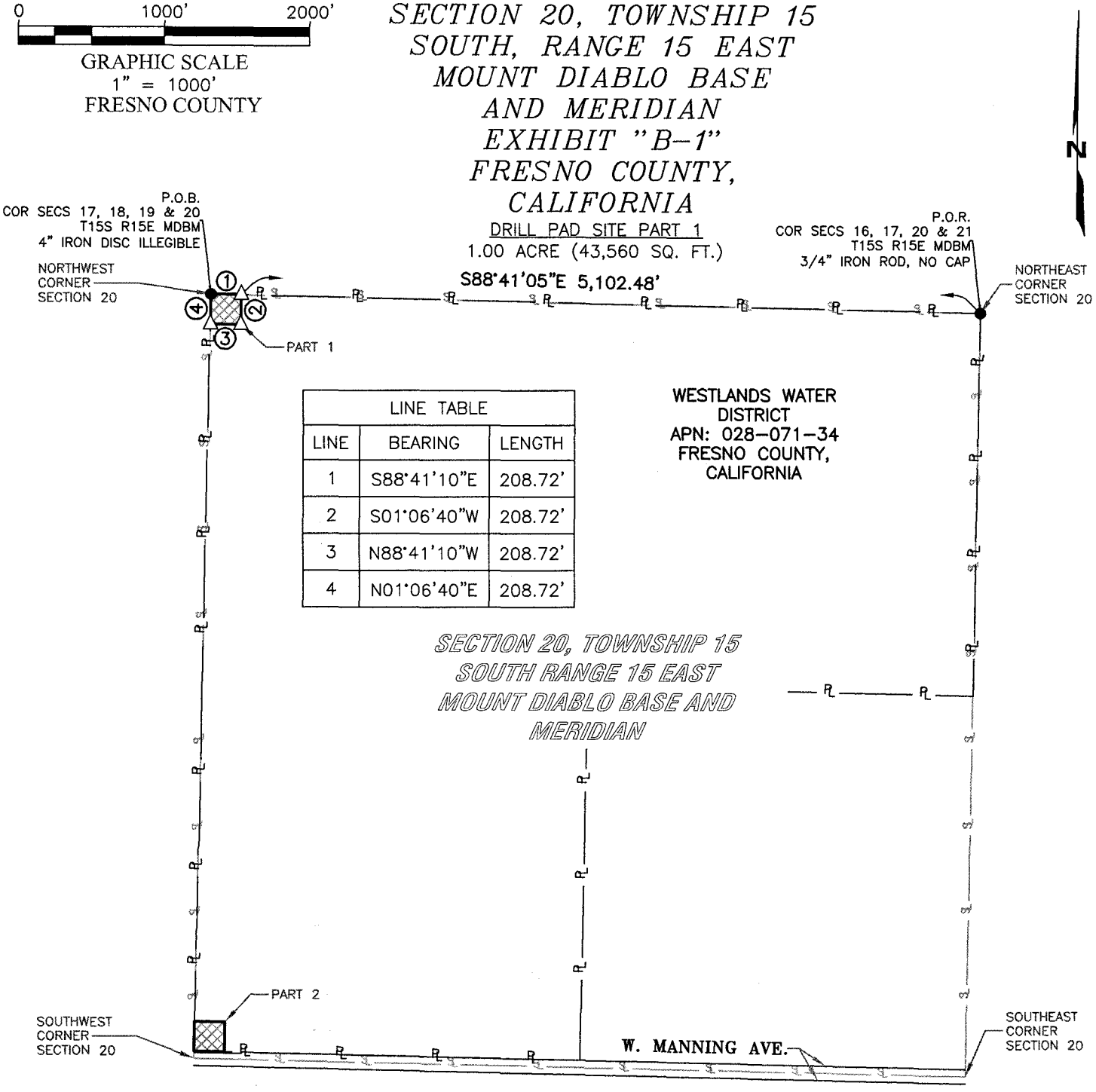
TYLER G. TRUJILLO
PLS NO. 9607
SURVEYING AND MAPPING, LLC.

0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

SECTION 20, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B-1" FRESNO COUNTY, CALIFORNIA

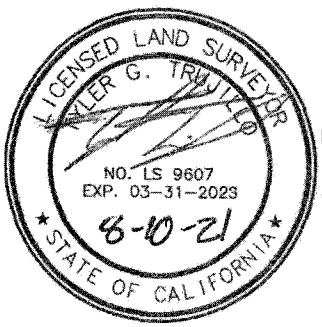
DRILL PAD SITE PART 1
1.00 ACRE (43,560 SQ. FT.)



LINE TABLE		
LINE	BEARING	LENGTH
1	S88°41'10"E	208.72'
2	S01°06'40"W	208.72'
3	N88°41'10"W	208.72'
4	N01°06'40"E	208.72'

LEGEND

PL	PARCEL LIMITS
SL	APPROXIMATE SECTION LINE
	EDGE OF ROAD R.O.W.
	ADJOINER PROPERTY
	REFERENCE TIE
	DRILL PAD SITE
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE



JOB NUMBER:	1020054573
DATE:	08/03/2021
SCALE:	1"=1000'
SURVEYOR:	T. TRUJILLO
TECHNICIAN:	M. NAPPER
DRAWING:	DRILL PAD EXHIBIT B-1
TRACT ID:	PARCEL 7
PARTYCHIEF:	R. BURBA
FIELDBOOKS:	37529

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Fax: 512.326.3029
email: info@sam.biz
Texas Firm
Registration No. 10064300

PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 7 - DRILL PAD EXHIBIT B-1 PG 1.DWG

FN: 48931

0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

SECTION 20, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B-2" FRESNO COUNTY, CALIFORNIA

LICENSED LAND SURVEYOR
TYLER G. TRUJILLO
NO. LS 9607
EXP. 03-31-2023
8-10-21
STATE OF CALIFORNIA

N

DRILL PAD SITE PART 2
1.00 ACRE (43,560 SQ. FT.)

P.O.C.
COR SECS 17, 18, 19 & 20
T15S R15E MDBM
4" IRON DISC ILLEGIBLE

NORTHWEST CORNER SECTION 20

NORTHEAST CORNER SECTION 20

PART 1

LINE TABLE		
LINE	BEARING	LENGTH
1	S88°41'44"E	208.72'
2	S01°08'33"W	208.72'
3	N88°41'44"W	208.72'
4	N01°08'33"E	208.72'

WESTLANDS WATER DISTRICT
APN: 028-071-34
FRESNO COUNTY, CALIFORNIA

S01°07'34"W 5,044.84'

SECTION 20, TOWNSHIP 15 SOUTH RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN

S01°08'33"W 50.00'

DETAIL "A"

DRILL PAD SITE

W. MANNING AVE.

NOT TO SCALE

P.O.B.

PART 2

SOUTHWEST CORNER SECTION 20

SEE DETAIL "A"

P.O.R.
COR SECS 19, 20, 29 & 30
T15S R15E MDBM
3" BRASS DISC IN RANGE BOX

P.O.R.
COR SECS 19, 20, 29 & 30
T15S R15E MDBM
3" BRASS DISC IN RANGE BOX

W. MANNING AVE.

SOUTHEAST CORNER SECTION 20

LEGEND

PL	PARCEL LIMITS
	APPROXIMATE SECTION LINE
	EDGE OF ROAD R.O.W.
	ADJOINER PROPERTY
	REFERENCE TIE
	DRILL PAD SITE
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE

JOB NUMBER: 1020054573
DATE: 08/03/2021
SCALE: 1"=1000'
SURVEYOR: T. TRUJILLO
TECHNICIAN: M. NAPPER
DRAWING: DRILL PAD EXHIBIT B-2
TRACT ID: PARCEL 7
PARTYCHIEF: R. BURBA
FIELDBOOKS: 37529

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Fax: 512.326.3029
email: info@sam.biz
Texas Firm
Registration No. 10064300

PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 7 - DRILL PAD EXHIBT B-2 PG 2.DWG

FN: 48931

DRILL PAD SITE
Section 21
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

EXHIBIT "B"

METES AND BOUNDS DESCRIPTION FOR A ONE (1) ACRE DRILL PAD SITE WESTLANDS WATER DISTRICT

BEING A METES AND BOUNDS DESCRIPTION FOR A ONE (1.00) ACRE DRILL PAD SITE, LOCATED IN SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID DRILL PAD SITES BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 3/4inch iron rod with no cap found on the north line of said Section 21, for the **POINT OF BEGINNING** and northwest corner of the drill pad site described herein;

THENCE, South 89°01'23" East, along the north line of said Section 21, same being the north line of the drill pad site described herein, a distance of 208.72 feet to a calculated point on the north line of said Section 21, for the northeast corner of the drill pad site described herein, from which a 1/2-inch spike in concrete found at the northeast corner of said Section 21, bears South 89°01'23" East, a distance of 2,455.43 feet;

THENCE, over and across said Section 21 the following two (2) courses and distances:

1) South 01°05'28" West, a distance of 208.72 feet to a calculated point for the southeast corner of the drill pad site described herein,

2) North 89°01'23" West, a distance of 208.72 feet to a calculated point for the southwest corner of the drill pad site described herein, and

3) North 01°05'28" East, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Notes:
1) For additional information, see attached sketch (Exhibit B) made in conjunction with and considered an integral part of the above described easement.
2) Bearings shown hereon are grid bearings of the California State Plane System, Zone Distances shown hereon are surface.
3) This description and the attached sketch (Exhibit B) were prepared for the purposes of creating a drill pad site area and are not intended for use as a property boundary survey.
4) Record information shown hereon is based upon a public records search performed by First American Title Insurance Company. Owner name shown as provided. Record information noted per title report provided.
5) Date of Survey: 08/03/2021

TYLER G. TRUJILLO
PLS NO. 9607
SURVEYING AND MAPPING, LLC.

FN 48933 (MSN)

54573

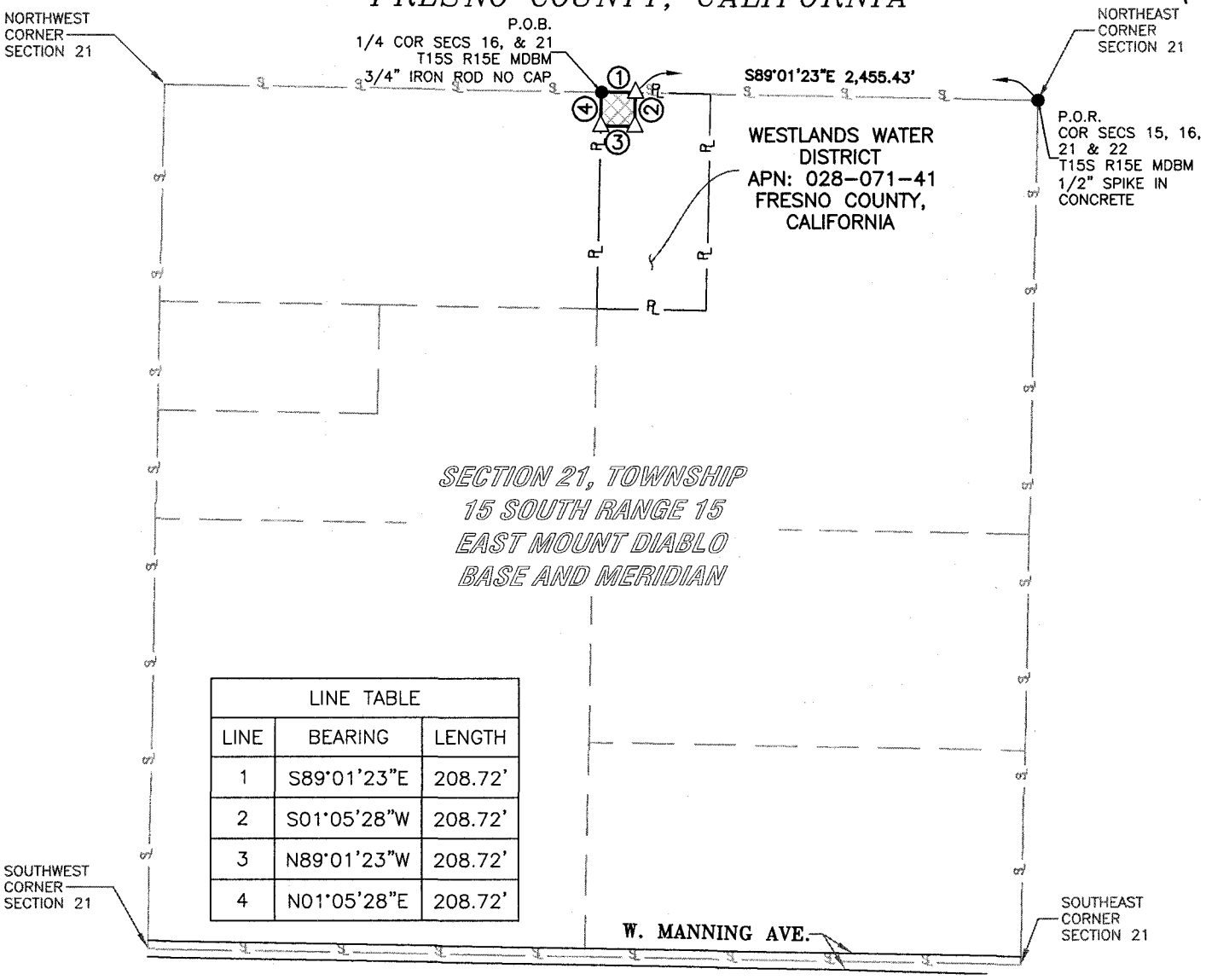
0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

DRILL PAD SITE
1.00 ACRE (43,560 SQ. FT.)

WEST HALF OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 21, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B" FRESNO COUNTY, CALIFORNIA

N



LINE TABLE		
LINE	BEARING	LENGTH
1	S89°01'23"E	208.72'
2	S01°05'28"W	208.72'
3	N89°01'23"W	208.72'
4	N01°05'28"E	208.72'

LICENSED LAND SURVEYOR
TYLER G. TRUJILLO
NO. LS 9607
EXP. 03-31-2023
6-10-21
STATE OF CALIFORNIA

LEGEND

- PARCEL LIMITS
- APPROXIMATE SECTION LINE
- EDGE OF ROAD R.O.W.
- ADJOINER PROPERTY
- DRILL PAD SITE
- MONUMENT FOUND (AS NOTED)
- CALCULATED POINT
- P.O.B. POINT OF BEGINNING
- P.O.R. POINT OF REFERENCE

JOB NUMBER: 1020054573
DATE: 08/03/2021
SCALE: 1"=1000'
SURVEYOR: T. TRUJILLO
TECHNICIAN: M. NAPPER
DRAWING: DRILL PAD EXHIBIT B
TRACT ID: PARCEL 24
PARTYCHIEF: XXX
FIELDBOOKS: XXX

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email: info@sam.biz
Texas Firm
Registration No. 10064300

PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 24 - DRILL PAD EXHIBT B.DWG

FN: 48933

DRILL PAD SITE
Section 28
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

EXHIBIT "B"

METES AND BOUNDS DESCRIPTION FOR A ONE (1) ACRE DRILL PAD SITE WESTLANDS WATER DISTRICT

BEING A METES AND BOUNDS DESCRIPTION FOR A ONE (1.00) ACRE DRILL PAD SITE, LOCATED IN THE SOUTH HALF OF THE NORTHWEST OF SECTION 28, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID DRILL PAD SITE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

COMMENCING at a 3-inch brass disc cap inside a vault, 2" down in the center of a road, a Fresno County Monument found, same being the northwest corner of said Section 28;

THENCE South 01°21'13" West , along the west line of said Section 28, a distance of 2,457.32 feet to a calculated point on the west line of said Section 28, same being the northwest corner and **POINT OF BEGINNING** of the drill pad site described herein;

THENCE, over and across said Section 28, the following two (2) courses and distances:

1) South 88°53'35" East, a distance of 208.72 feet to a calculated point for the northeast corner of the drill pad site described herein, and

2) South 01°13'53" West, a distance of 208.72 feet to a calculated point on the southeast corner of the drill pad site described herein;

THENCE, North 88°53'35" West, a distance of 208.72 feet to a calculated point, on the west line of said Section 28, same being the southwest corner of the drill pad site described herein, from which a 1.5- inch iron pipe found at the southwest corner of said Section 28, bears South 01°13'35" West, a distance of 2,649.80 feet;

THENCE, North 01°13'53" East along the west line of said Section 28, same being the west line of the drill pads site described herein, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Notes:

1) For additional information, see attached sketch (Exhibit B) made in conjunction with and considered an integral part of the above described easement.
2) Bearings shown hereon are grid bearings of the California State Plane System, Zone Distances shown hereon are surface.
3) This description and the attached sketch (Exhibit B) were prepared for the purposes of creating a drill pad site area and are not intended for use as a property boundary survey.
4) Record information shown hereon is based upon a public records search performed by First American Title Insurance Company. Owner name shown as provided. Record information noted per title report provided.
5) Date of Survey: 08/03/2021

TYLER G. TRUJILLO
PLS NO. 9607
SURVEYING AND MAPPING, LLC.

FN 48929 (MSN)

54573

0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

SOUTH HALF OF THE NORTHWEST QUARTER AND THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B" FRESNO COUNTY, CALIFORNIA

N

DRILL PAD SITE
1.00 ACRE (43,560 SQ. FT.)

P.O.C.
COR SECS 20, 21, 28 & 29
T15S R15E MDBM
3" BRASS DISC CAP INSIDE VAULT,
2" DOWN IN CENTER OF ROAD,
FRESNO COUNTY MONUMENT

NORTHWEST CORNER SECTION 28

W. MANNING AVE.

NORTHEAST CORNER SECTION 28

S01°21'31"W 2,457.32'

WESTLANDS WATER DISTRICT
APN: 028-111-19
FRESNO COUNTY, CALIFORNIA

P.O.B.

SECTION 28, TOWNSHIP 15 SOUTH RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN

S01°13'53"W 2,649.80'

LINE TABLE		
LINE	BEARING	LENGTH
1	S88°53'35"E	208.72'
2	S01°13'53"W	208.72'
3	N88°53'35"W	208.72'
4	N01°13'53"E	208.72'

SOUTHEAST CORNER SECTION 28

SOUTHWEST CORNER SECTION 28

P.O.R.
COR SECS 28, 29, 32 & 33
T15S R15E MDBM
1.5" IRON PIPE

LICENSED LAND SURVEYOR
TYLER G. TRUJILLO
NO. LS 9607
EXP. 03-31-2023
8-10-21
STATE OF CALIFORNIA

LEGEND

- PL — PARCEL LIMITS
- ℄ — APPROXIMATE SECTION LINE
- ADJOINER PROPERTY
- REFERENCE TIE
- EDGE OF ROAD R.O.W.
- DRILL PAD SITE
- ● MONUMENT FOUND (AS NOTED)
- △ CALCULATED POINT
- P.O.C. POINT OF COMMENCEMENT
- P.O.B. POINT OF BEGINNING
- P.O.R. POINT OF REFERENCE

JOB NUMBER: 1020054573
DATE: 08/03/2021
SCALE: 1"=1000'
SURVEYOR: T. TRUJILLO
TECHNICIAN: M. NAPPER
DRAWING: DRILL PAD EXHIBIT B
TRACT ID: PARCEL 18 APN: 028-111-19
PARTYCHIEF: R. BURBA
FIELDBOOKS: 37529

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email: info@sam.biz
Texas Firm
Registration No. 10064300

PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 18 – DRILL PAD EXHIBT B.DWG

FN: 48929

DRILL PAD SITE
Section 29
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

EXHIBIT "B"

METES AND BOUNDS DESCRIPTION FOR A ONE (1) ACRE DRILL PAD SITE WESTLANDS WATER DISTRICT

BEING A METES AND BOUNDS DESCRIPTION FOR A ONE (1.00) ACRE DRILL PAD SITE, LOCATED IN THE NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID DRILL PAD SITE BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

COMMENCING at a 3-inch brass disc cap in a range box found on the north line of said Section 29, same being within the right-of-way for West Manning Avenue, from which a 3-inch brass disc cap inside a vault, 2-inches down in the center of a road, Fresno County Monument, found at the northeast corner of said Section 29, bears South 89°01'23" East, a distance of 2,664.16 feet;

THENCE South 01°11'45" West, over and across said Section 29, same being said West Manning Avenue a distance of 50.00 feet to a calculated point within said Section 29, same being the south right-of-way line of said West Manning Avenue, for the **POINT OF BEGINNING** and northwest corner of the drill pad site described herein;

THENCE, over and across said Section 29 the following four (4) courses and distances:

1) South 88°40'17" East, a distance of 208.72 feet to a calculated point for the northeast corner of the drill pad site described herein,

2) South 01°11'45" West, a distance of 208.72 feet to a calculated point for the southeast corner of the drill pad site described herein,

3) North 88°40'16" West, a distance of 208.72 feet to a calculated point for the southwest corner of the drill pad site described herein, and

4) North 01°11'45" West, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Notes:
1) For additional information, see attached sketch (Exhibit B) made in conjunction with and considered an integral part of the above described easement.
2) Bearings shown hereon are grid bearings of the California State Plane System, Zone Distances shown hereon are surface.
3) This description and the attached sketch (Exhibit B) were prepared for the purposes of creating a drill pad site area and are not intended for use as a property boundary survey.
4) Record information shown hereon is based upon a public records search performed by First American Title Insurance Company. Owner name shown as provided. Record information noted per title report provided.
5) Date of Survey: 08/03/2021

TYLER G. TRUJILLO
PLS NO. 9607
SURVEYING AND MAPPING, LLC.

FN 48930 (MSN)

54573

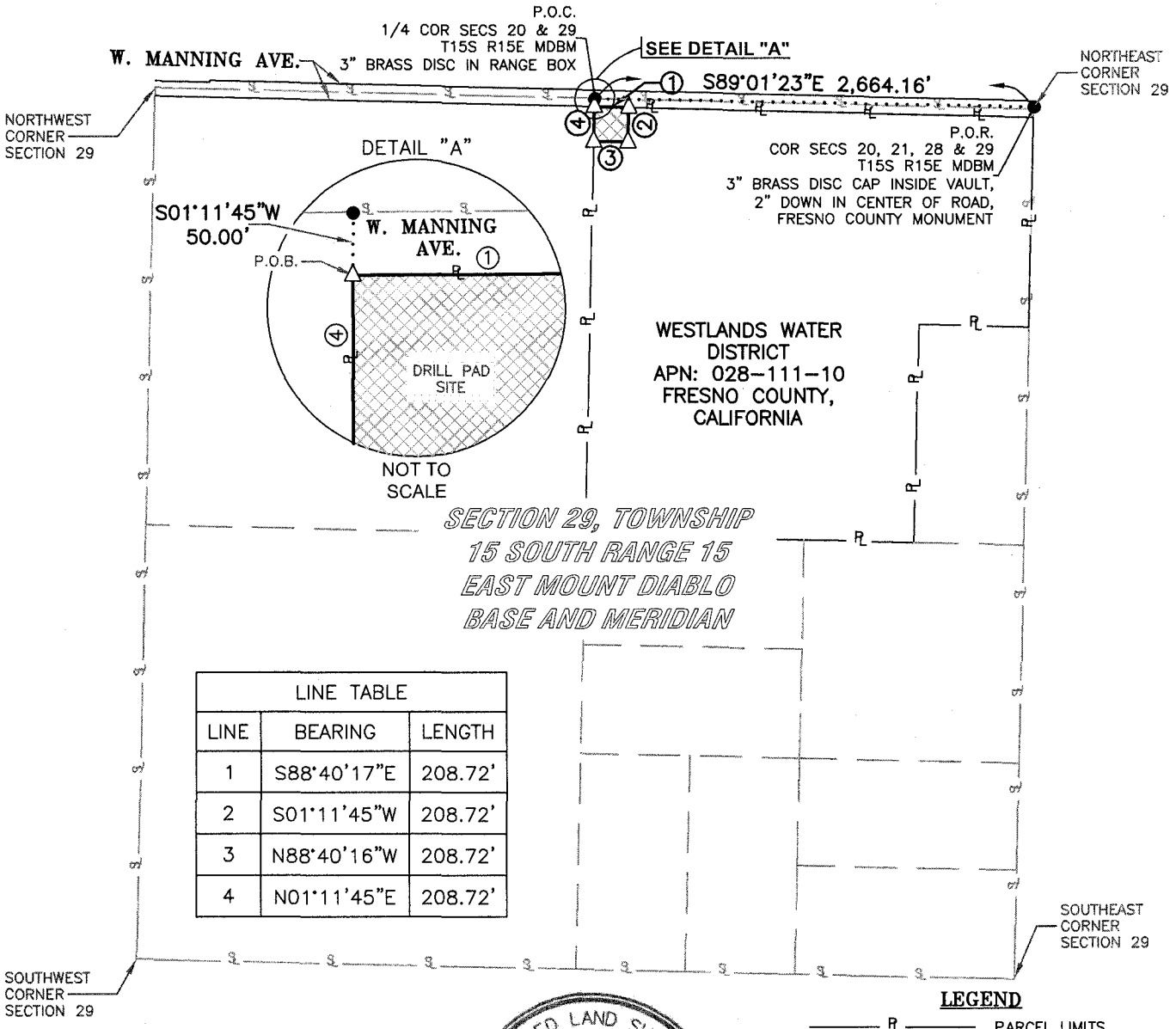
0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

NORTHEAST QUARTER OF SECTION 29, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B" FRESNO COUNTY, CALIFORNIA

DRILL PAD
1.00 ACRE (43,560 SQ. FT.)

N



LINE TABLE		
LINE	BEARING	LENGTH
1	S88°40'17"E	208.72'
2	S01°11'45"W	208.72'
3	N88°40'16"W	208.72'
4	N01°11'45"E	208.72'

LICENSED LAND SURVEYOR
TYLER G. TRUJILLO
NO. LS 9607
EXP. 03-31-2023
8-10-21
STATE OF CALIFORNIA

LEGEND

PL	PARCEL LIMITS
S	APPROXIMATE SECTION LINE
	EDGE OF ROAD R.O.W.
	ADJOINER PROPERTY
	REFERENCE TIE
	DRILL PAD SITE
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE

JOB NUMBER: 1020054573
DATE: 08/03/2021
SCALE: 1"=1000'
SURVEYOR: T. TRUJILLO
TECHNICIAN: M. NAPPER
DRAWING: DRILL PAD EXHIBIT B
TRACT ID: PARCEL 1
PARTYCHIEF: R. BURBA
FIELDBOOKS: 37529

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Fax: 512.326.3029
email: info@sam.biz
Texas Firm
Registration No. 10064300

PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 1 - DRILL PAD SITE EXHIBT B.DWG

FN: 48930

DRILL PAD SITE
Section 30
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

EXHIBIT "B"

METES AND BOUNDS DESCRIPTIONS FOR ONE (1) ACRE DRILL PAD SITES WESTLANDS WATER DISTRICT

BEING METES AND BOUNDS DESCRIPTIONS FOR TWO (2) ONE (1.00) ACRE DRILL PAD SITES, LOCATED IN SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST, MOUNT DIABLO BASE AND MERIDIAN, SAID DRILL PAD SITES BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

Part 1 Exhibit B-1

COMMENCING at a 3-inch brass disc in range box found on the north line of said Section 30, same being within the right-of-way of West Manning Avenue, from which a 3-1/2-inch brass cap stamped "FRESNO COUNTY MONUMENT 1995" found at the northwest corner of said Section 30, same being within the right-of-way of West Manning Avenue, same being within the right-of-way of South Derrick Avenue, bears North 88°38'00" West, a distance of 2,761.42 feet;

THENCE South 01°09'50" West, over and across said Section 30, same being West Manning Avenue, a distance of 50.00 feet to a calculated point within said Section 30, for the **POINT OF BEGINNING** and northeast corner of the drill pad site described herein;

THENCE, South 01°09'50" East, along the west line of said Section 30, same being the west line of the drill pad site described herein, a distance of 208.72 feet to a calculated point on the west line of said Section 30, for the southeast corner of the drill pad site described herein;

THENCE, over and across said Section 30 the following three (3) courses and distances:

1) North 88°38'00" West, a distance of 208.72 feet to a calculated point for the southwest corner of the drill pad site described herein,

2) North 01°09'50" East, a distance of 208.72 feet to a calculated point on the north line of said Section 30, for the northwest corner of the drill pad site described herein, and

3) North 88°38'00" East with the south right-of-way line of said West Manning Avenue, same being the west line of the drill pad site described herein, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Part 2 Exhibit B-2

BEGINNING at a No. 5 rebar with yellow plastic cap stamped "RPLS #3271" found at the southeast corner of said Section 30, for the **POINT OF BEGINNING** and southeast corner of the drill pad site described herein;

THENCE, North 88°40'20" West, along the south line of said Section 30, same being the south line of the drill pad site described herein, a distance of 208.72 feet to a calculated point on the south line of said Section 30, for the southwest corner of the drill pad site described herein, from which a 3-1/2-inch brass cap stamped "FRESNO COUNTY MONUMENT 1995" found at the southwest corner of said Section 30, same being within the right-of-way of South Derrick Avenue, bears North 88°40'46" West, a distance of 5,188.87 feet;

Continued on page 2 of 4

DRILL PAD SITE
Section 30
Township 15 South, Range 15 East
Diablo Mount Base and Meridian
Fresno County, California

THENCE, over and across said Section 30 the following two (2) courses and distances:

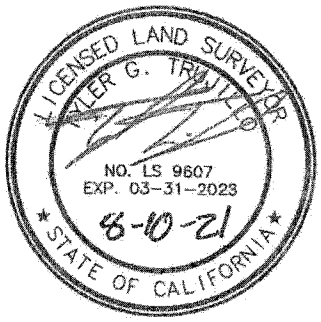
4) North 01°08'38" East, a distance of 208.72 feet to a calculated point for the northwest corner of the drill pad site described herein, and

5) South 88°40'20" East, a distance of 208.72 feet to a calculated point on the east line of said Section 30, for the northeast corner of the drill pad site described herein;

THENCE, South 01°08'38" West along the east line of said Section 30, a distance of 208.72 feet to the **POINT OF BEGINNING** of the drill pad site described herein described herein.

Described drill pad site being a total acreage of 1.00 acre (±43,560 SQ. FT.).

Notes:
1) For additional information, see attached sketch (Exhibit B-1 & B-2) made in conjunction with and considered an integral part of the above described easement.
2) Bearings shown hereon are grid bearings of the California State Plane System, Zone Distances shown hereon are surface.
3) This description and the attached sketch (Exhibit B-1 & B-2) were prepared for the purposes of creating a drill pad site area and are not intended for use as a property boundary survey.
4) Record information shown hereon is based upon a public records search performed by First American Title Insurance Company. Owner name shown as provided. Record information noted per title report provided.
5) Date of Survey: 08/03/2021



TYLER G. TRUJILLO
PLS NO. 9607
SURVEYING AND MAPPING, LLC.

0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

DRILL PAD SITE PART 1
1.00 ACRE (43,560 SQ. FT.)

SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B-1" FRESNO COUNTY, CALIFORNIA

N

P.O.R.
COR SECS 19 & 30
T15S R15E AND SECS 24 & 25 T15S
R14E MDBM
3-1/2" BRASS CAP STAMPED "FRESNO
COUNTY MONUMENT 1995"

NORTHWEST CORNER SECTION 30

P.O.C.
1/4 COR SECS 19 & 30
T15S R15E MDBM
3" BRASS DISC IN RANGE BOX

SEE DETAIL "A"

NORTHEAST CORNER SECTION 30

N88°38'00"W 2,761.42'

W. MANNING AVE.

P.O.B.

PART 1

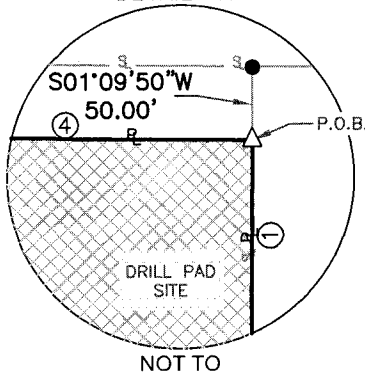
S. DERRICK AVE.

LINE TABLE		
LINE	BEARING	LENGTH
1	S01°09'50"W	208.72'
2	N88°38'00"W	208.72'
3	N01°09'50"E	208.72'
4	S88°38'00"E	208.72'

SECTION 30, TOWNSHIP 15 SOUTH RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN

WESTLANDS WATER DISTRICT
APN: 028-111-01
FRESNO COUNTY, CALIFORNIA

DETAIL "A"



NOT TO SCALE

PART 2

SOUTHWEST CORNER SECTION 30

SOUTHEAST CORNER SECTION 30

LEGEND

- PARCEL LIMITS
- APPROXIMATE SECTION LINE
- EDGE OF ROAD R.O.W.
- ADJOINER PROPERTY
- REFERENCE TIE
- DRILL PAD SITE
- MONUMENT FOUND (AS NOTED)
- CALCULATED POINT
- P.O.C. POINT OF COMMENCEMENT
- P.O.B. POINT OF BEGINNING
- P.O.R. POINT OF REFERENCE

LICENSED LAND SURVEYOR
TYLER G. TRUJILLO
NO. LS 9607
EXP. 03-31-2023
6-10-21
STATE OF CALIFORNIA

JOB NUMBER: 1020054573
DATE: 08/03/2021
SCALE: 1"=1000'
SURVEYOR: T. TRUJILLO
TECHNICIAN: M. NAPPER
DRAWING: DRILL PAD EXHIBIT B-1
TRACT ID: PARCEL 9
PARTYCHIEF: R. BURBA
FIELDBOOKS: 37529

SAM™
4801 Southwest Parkway
Building Two, Suite 100
Austin, Texas 78735
Ofc: 512.447.0575
Fax: 512.326.3029
email: info@sam.biz
Texas Firm
Registration No. 10064300

PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 9 - DRILL PAD EXHIBIT B-1 PG 1.DWG

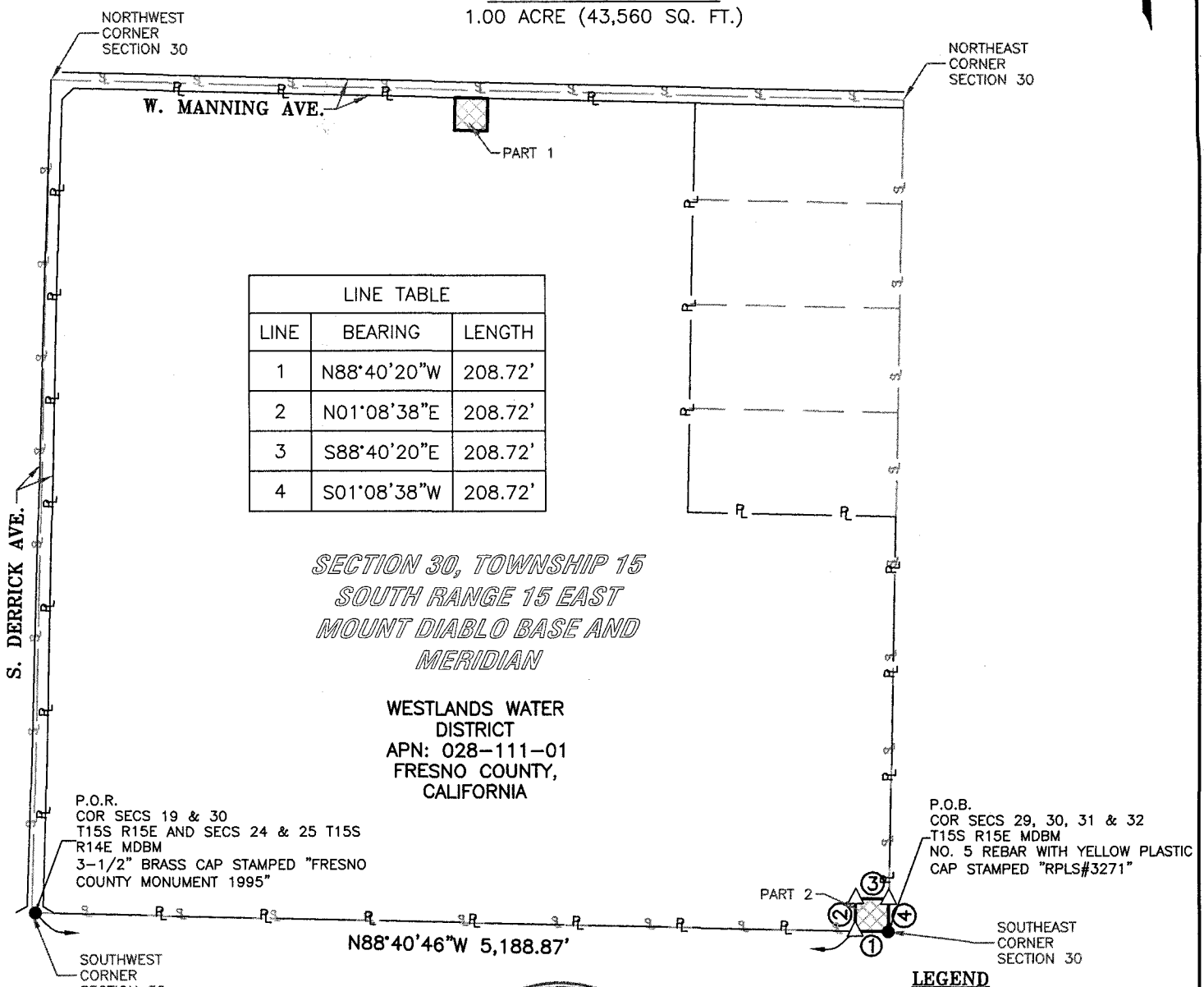
FN: 48932

0 1000' 2000'

GRAPHIC SCALE
1" = 1000'
FRESNO COUNTY

SECTION 30, TOWNSHIP 15 SOUTH, RANGE 15 EAST MOUNT DIABLO BASE AND MERIDIAN EXHIBIT "B-1" FRESNO COUNTY, CALIFORNIA

DRILL PAD SITE PART 2
1.00 ACRE (43,560 SQ. FT.)



LINE TABLE		
LINE	BEARING	LENGTH
1	N88°40'20"W	208.72'
2	N01°08'38"E	208.72'
3	S88°40'20"E	208.72'
4	S01°08'38"W	208.72'

LEGEND

℄	PARCEL LIMITS
℄	APPROXIMATE SECTION LINE
	EDGE OF ROAD R.O.W.
	ADJOINER PROPERTY
.....	REFERENCE TIE
	DRILL PAD SITE
●	MONUMENT FOUND (AS NOTED)
△	CALCULATED POINT
P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
P.O.R.	POINT OF REFERENCE

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PATH:T:\1020054573\100\SURVEY\03EXHIBITS\DRILL PAD EXHIBITS\PARCEL 9 - DRILL PAD EXHIBT B-2 PG 2.DWG

FN: 48932

DUDEK
4900 CALIFORNIA AVENUE
TOWER B 2ND FLOOR
BAKERSFIELD, CALIFORNIA 93309
T 661.208.4127

MEMORANDUM

To:	Patrick Cousineau, EDP Renewables North America
From:	Adam Poll, Dudek
Subject:	Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Scarlet Solar Energy Project
Date:	May 23, 2023
cc:	Alex Hardy, Dudek; Erlin Worthington, Dudek
Attachment:	A, Emission Calculations

Dudek is pleased to present EDP Renewables North America (applicant), with the following air quality and greenhouse gas (GHG) analysis for the proposed Scarlet Solar Energy Project (project) located in Fresno County (County). This memorandum estimates criteria air pollutant and GHG emissions and impacts from construction and operation of the project in accordance with the California Environmental Quality Act (CEQA) Guidelines. The contents and organization of this memorandum are as follows: Project Description, General Analysis and Methodology, Thresholds of Significance and Impact Analyses for the Air Quality Assessment and GHG Emissions Assessment, Conclusions, and References Cited.

1 Project Description

The Project consists of a solar photovoltaic (PV) electricity generating facility and energy storage system and associated infrastructure. The Solar Facility would generate a total of up to 400 megawatts (MW) of alternating current (AC) at the point of electrical grid interconnection on approximately 4,089 acres in unincorporated western Fresno County. The Project would provide solar power to utility customers by interconnecting to the regional electricity grid at Pacific Gas and Electric Company's (PG&E) Tranquillity Switching Station located approximately 0.75 mile west of the Project site.

Project design refinements involving consolidation of the two electrical 230 kV substations and one 230 kV switchyard included in the FEIR) into one consolidated centralized location where all power generated from various solar blocks will be stepped-up for delivery to the PG&E Tranquility Switching Station is being proposed..

2 General Analysis and Methodology

The project Site is located within the San Joaquin Valley Air Basin (SJVAB) and is within the jurisdictional boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which has jurisdiction over Fresno County (County) where the project is located. Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public

health. Criteria air pollutants that are evaluated include volatile organic compounds (VOCs; sometimes referred to as reactive organic gases (ROGs)), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $PM_{2.5}$). VOCs and NO_x are important because they are precursors to ozone (O_3).

GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2e). The CO_2e for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons (MT) of CO_2e = (MT of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 25, which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2, and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

2.1 Construction

Emissions from the construction phase of the project were estimated using the California Emissions Estimator Model (CalEEMod) Version 2022 (CAPCOA 2022). For the purposes of modeling, it was assumed that construction of the project would commence in July 2022[1] and would last approximately 34 months, ending in April 2025. The project was assumed to be operational for 35 years and then be decommissioned and removed at the end of its lifetime. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate):

- Scarlet I: Site Preparation (2 months)
- Scarlet II: Site Preparation (2 months)
- Scarlet II: Energy Storage System Site Preparation (2 months)
- Scarlet III: Energy Storage System Site Preparation (2 months)

[1] The analysis assumes a construction start date of July 2022, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

- Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (10 months)
- Scarlet I: Solar Facility - PV Module System Installation (12 months)
- Scarlet I: Solar Facility - Substation and Electrical System Installation (8 months)
- Scarlet II: Solar Facility - PV Module System Installation (9 months)
- Scarlet II: Solar Facility - Substation and Electrical System Installation (8 months)
- Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (11 months)
- Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (11 months)

The majority of the phases listed above would occur concurrently and would not occur sequentially in isolation. The estimated construction duration was provided by the project applicant. Detailed construction equipment modeling assumptions are provided in Attachment A, CalEEMod Outputs.

The construction equipment mix used for estimating the construction emissions of the project is based on information provided by the project applicant and is shown in Table 1.

Table 1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Scarlet I: Site Preparation	60	4	2	Graders	2	7
				Tractors/Loaders/Backhoes	4	7
				Skid Steer Loaders	4	7
				Rollers	8	7
				Excavators	1	7
Scarlet II: Site Preparation	440	30	24	Graders	2	7
				Tractors/Loaders/Backhoes	4	7
				Skid Steer Loaders	4	7
				Rollers	8	7
				Excavators	1	7
Scarlet II: Energy Storage System Site Preparation	60	4	2	Graders	2	7
				Skid Steer Loaders	4	7
				Rollers	4	7
				Excavators	2	7
				Dumpers/Tenders	5	4
Scarlet III: Energy Storage System Site Preparation	40	10	4	Graders	2	7
				Skid Steer Loaders	4	7
				Rollers	4	7
				Excavators	2	7
				Dumpers/Tenders	5	4

Table 1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
				Forklifts	2	7
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	40	10	4	Skid Steer Loaders	1	7
				Excavators	1	7
				Dumpers/Tenders	1	4
				Bore/Drill Rigs	2	7
				Trenchers	2	7
				Tractors/Loaders/ Backhoes	1	7
				Cranes	1	7
				Aerial Lifts	1	7
				Generator Sets	1	9
				Skid Steer Loaders	20	7
Scarlet I: Solar Facility - PV Module System Installation	32	6	6	Bore/Drill Rigs	10	7
				Forklifts	8	6
				Generator Sets	5	7
				Rubber Tired Dozers	2	6
				Trenchers	1	6
				Rubber Tired Dozers	2	7
Scarlet I: Solar Facility - Substation and Electrical System Installation	80	12	10	Graders	1	7
				Skid Steer Loaders	1	7
				Rubber Tired Loaders	7	7
				Rollers	1	7
				Generator Sets	17	8
				Forklifts	1	7
				Bore/Drill Rigs	2	7
				Trenchers	1	7
				Excavators	4	7
				Cranes	2	4
				Skid Steer Loaders	20	7
Scarlet II: Solar Facility - PV Module System Installation	440	40	32	Bore/Drill Rigs	10	7
				Forklifts	8	6
				Generator Sets	5	7
				Rubber Tired Dozers	2	6
				Trenchers	1	6
				Rubber Tired Dozers	2	7
Scarlet II: Solar Facility - Substation and Electrical System Installation	80	12	10	Graders	1	7
				Skid Steer Loaders	1	7
				Rubber Tired Loaders	1	7
				Rollers	1	7

Table 1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
				Generator Sets	17	8
				Forklifts	1	7
				Bore/Drill Rigs	2	7
				Trenchers	1	7
				Excavators	4	7
				Cranes	2	4
				Graders	2	7
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	40	16	14	Forklifts	3	7
				Skid Steer Loaders	2	7
				Rubber Tired Loaders	2	7
				Excavators	1	7
				Bore/Drill Rigs	4	7
				Trenchers	2	7
				Tractors/Loaders/ Backhoes	1	7
				Cranes	1	7
				Aerial Lifts	1	7
				Generator Sets	1	9
				Graders	2	7
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	40	16	14	Forklifts	3	7
				Skid Steer Loaders	2	7
				Rubber Tired Loaders	2	7
				Excavators	1	7
				Bore/Drill Rigs	4	7
				Trenchers	2	7
				Tractors/Loaders/ Backhoes	1	7
				Cranes	1	7
				Aerial Lifts	1	7
				Generator Sets	1	9

Note: See Attachment A for details.

For the analysis, it was assumed that heavy construction equipment would be operating 5 days per week (22 days per month) during project construction. Construction worker and vendor trips were based on applicant provided data. Equipment emissions were estimated using the CalEEMod default emission factors for the construction duration.

All vehicles and haul trucks would travel to and from the onsite staging area. All water trucks were assumed to travel on unpaved road. Worker vehicles and vendor trucks were assumed to travel 50 miles per one-way trip and haul trucks were assumed to travel 115 miles per one-way trip.

Implementation of the project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, and architectural coatings. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would comply with SJVAPCD Rule 8021 to control dust emissions generated during the grading activities, which would be required as a condition of approval. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites to maintain acceptable levels of dust generation.

A detailed depiction of the construction schedule—including information regarding phases and equipment used during each phase—is included in Attachment A to this letter report. The information contained in Attachment A was used as CalEEMod model inputs.

2.2 Operation

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2025 was assumed, as it would be the first year following completion of construction.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. The battery storage containers would have heating, ventilation, and air conditioning systems to keep the batteries in the optimal operating temperatures. It was estimated that the project would require up to 1,752,000 kWh of electricity per year. The project would not have natural gas.

Emissions were calculated by multiplying the energy use by the utility's carbon intensity (pounds of GHGs per megawatt-hour for electricity) for CO_2 and other GHGs. Annual electricity emissions were estimated in CalEEMod using the emissions factors for PG&E, which would be the energy source provider for the project.

Offroad Sources

The project would require periodic use of offroad equipment during maintenance activities including all-terrain vehicles, tractors, portable generators, and water trailers. Equipment activity information was provided by the project applicant. CalEEMod default emission factors, equipment horsepower, and load factors were used to estimate emissions from this source.

Mobile Sources

Following the completion of construction activities, the project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of the maintenance activity of the project. Water trucks would also visit the site for periodic panel washing. CalEEMod default data, including trip characteristics and emissions

factors, were used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the associated use, as modeled within CalEEMod. Emission factors representing the vehicle mix and emissions for 2025 were used to estimate emissions associated with vehicular sources.

Water

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. The project would utilize water for dust suppression during construction and panel washing during operation. Water use was provided by the applicant.

3 Air Quality Assessment

3.1 Thresholds of Significance

San Joaquin Valley Air Pollution Control District

The SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts* has established emissions-based thresholds of significance for criteria pollutants (SJVAPCD 2015), which are depicted in Table 2. As shown in Table 2, the SJVAPCD has established significance thresholds for construction emissions and operational permitted and non-permitted equipment and activities, and it recommends evaluating impact significance for these categories separately. These thresholds of significance are based on a calendar-year basis, although construction emissions are assessed on a rolling 12-month period.

Table 2. San Joaquin Valley Air Pollution Control District California Environmental Quality Act Significance Thresholds for Criteria Pollutants

Pollutant	Construction Emissions (tons per year)	Operational Emissions (tons per year)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
ROG	10	10	10
NO_x	10	10	10
CO	100	100	100
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015.

3.2 Impact Analysis

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SJVAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant

in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road vendor trucks, haul trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

CalEEMod Version 2022 was used to estimate emissions from construction of the project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The project would be required to comply with SJVAPCD Rule 8021 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The CalEEMod default assumptions were used for estimating fugitive dust emissions from grading on site. Table 3 presents the annual emissions reported as the highest rolling 12 months estimated during construction of the project. Details of the emission calculations are provided in Attachment A. The project would also comply with SJVAPCD Rule 9510, Indirect Source Review, which requires development projects to reduce exhaust emissions from construction equipment by 20% for NO_x and 45% for PM_{10} compared to the statewide average.

Table 3. Estimated Maximum Construction Criteria Air Pollutant Emissions – Unmitigated

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
2022	0.68	6.48	8.82	0.02	1.16	0.44
2023	2.74	25.88	38.25	0.08	5.49	1.93
2024	0.74	7.93	10.56	0.02	1.50	0.55
2025	0.12	1.34	1.66	<0.00	0.20	0.08
Maximum Emissions	2.74	25.88	38.25	0.08	5.49	1.93
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District; ISR = Indirect Source Review; <0.00 = less than 0.004.
See Attachment A for complete results.

As shown in Table 3, the project construction would exceed SJVAPCD's threshold for NOx. Per mitigation measure MM-AQ-1 of the Final Environmental Impact Report for the project, higher tier construction equipment is required. Table 4 presents the emissions from the project including MM-AQ-1.

Table 4. Estimated Maximum Construction Criteria Air Pollutant Emissions – Mitigated

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
2022	0.36	6.07	8.97	0.02	1.11	0.39
2023	1.59	25.32	38.96	0.08	5.38	1.82
2024	0.38	8.49	11.29	0.02	1.49	0.55
2025	0.06	1.56	1.85	<0.00	0.21	0.09
Maximum Emissions	1.59	25.32	38.96	0.08	5.38	1.82
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District; ISR = Indirect Source Review; <0.00 = less than 0.004.
See Attachment A for complete results.

As shown in Table 4, with mitigation measure MM-AQ-1, the project would exceed the SJVAPCD threshold for NOx.

Operational Emissions

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2025 was assumed, as it would be the first year following completion of construction. Table 5 presents the estimated emissions during operation.

Table 5. Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Emissions Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
Area	0.02	<0.00	0.02	<0.00	<0.00	<0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Offroad	0.07	0.57	0.62	<0.00	0.02	0.02
Mobile	0.02	0.02	0.13	<0.00	0.01	<0.00
Total	0.11	0.59	0.77	<0.00	0.03	0.02
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District. <0.00 = less than 0.004
See Attachment A for complete results. Totals may not sum precisely due to rounding.

As shown in Table 5, the project would not exceed SJVAPCD's significance thresholds during operations.

4 Greenhouse Gas Emissions Assessment

4.1 Thresholds of Significance

The project EIR evaluated the impacts of GHG emissions qualitatively against the reduction measures in CARB's 2017 Climate Change Scoping Plan. As such, there were no quantitative thresholds used for GHG emissions in the EIR. Therefore, the emissions from the revised project are included for informational purposes consistent with the EIR.

4.2 Impact Analysis

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SJVAPCD recommends that construction emissions be amortized over the project lifetime (35 years); therefore, the total construction GHG emissions were calculated, amortized over 35 years, and then added to the operational emissions.

CalEEMod was used to estimate GHG emissions during construction. Construction of the project is anticipated to last up to 34 months. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (vendor trucks and worker vehicles). Table 6 presents construction GHG emissions for the project from on-site and off-site emission sources.

Table 6. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2022	2,097.35	0.07	0.14	2,142.32
2023	10,011.27	0.31	0.71	10,239.67
2024	3,271.08	0.10	0.27	3,356.59
2025	549.28	0.01	0.05	564.12
			Total	**16,302.70**
			Annualized emissions over 30 years (metric tons per year)	***465.79***

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Attachment A for complete results.

As shown in Table 6, the estimated total GHG emissions during construction of the project would be approximately 16,303 MT CO_2e. Estimated project-generated construction emissions amortized over 35 years would be approximately 466 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is determined by adding the amortized construction emissions to the operational emissions and comparing them to the operational threshold.

Operational Emissions

CalEEMod was used to estimate potential project generated operational GHG emissions from area sources, energy sources (electricity), mobile sources, off-road equipment, solid waste, and water and wastewater. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Section 2.2 for a discussion of operational emission calculation methodology and assumptions. Operational year 2025 was assumed as the first year of operation. Table 7 shows the estimated operational emissions from the project.

Table 7. Estimated Annual Operation GHG Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	0.01	0.00	0.00	0.01
Energy	162.10	0.03	<0.00	163.71
Offroad	94.40	<0.00	<0.00	94.72
Mobile	30.97	<0.00	<0.00	31.53
Water	2.21	<0.00	<0.00	2.23
Amortized construction emissions				*465.79*
Total				**757.99**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Attachment A for complete results.

As shown in Table 7, the estimated total GHG emissions during operation of the project would be approximately 758 MT CO_2e per year, including amortized construction emissions.

5 Conclusions

Criteria air pollutant emissions generated during construction of the project would exceed the SJVAPCD's significance threshold for NOx after mitigation. Operation of the project would not exceed SJVAPCD's significance thresholds.

Estimated total GHG emissions generated during operation, including amortized construction emissions, would be 758 MT CO_2e per year.

Sincerely,

Adam Poll, QEP, LEED AP BD+C
Senior Air Quality Specialist

Cc: *Alex Hardy, Dudek;*
Erlin Worthington, Dudek
Att: *A – Emission Calculations*

6 References

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Attachment A

Emission Calculations

Scarlet Solar Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Scarlet Solar
Construction Start Date	9/19/2022
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	22.6
Location	W South Ave, California 93706, USA
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2519
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.13

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Light Industry	1.00	1000sqft	4,089	1,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	37.8	31.3	285	510	0.92	10.4	55.3	65.7	9.66	12.8	22.5	—	132,527	132,527	3.93	9.25	312	135,695
Mit.	21.1	18.3	282	519	0.92	9.28	55.3	64.6	8.51	12.8	21.3	—	132,527	132,527	3.93	9.25	312	135,695
% Reduced	44%	41%	1%	-2%	—	11%	—	2%	12%	—	5%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	33.4	26.4	268	386	0.87	9.33	51.5	60.8	8.65	12.1	20.8	—	119,930	119,930	3.74	8.92	7.70	122,688
Mit.	19.2	15.4	264	394	0.87	8.42	51.5	59.9	7.71	12.1	19.8	—	119,930	119,930	3.74	8.92	7.70	122,688
% Reduced	43%	42%	2%	-2%	—	10%	—	1%	11%	—	5%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	18.2	15.0	142	210	0.44	5.15	24.9	30.1	4.77	5.79	10.6	—	60,469	60,469	1.87	4.26	61.7	61,848

Mit.	10.1	8.71	139	213	0.44	4.55	24.9	29.5	4.17	5.79	9.96	—	60,469	60,469	1.87	4.26	61.7	61,848
% Reduced	45%	42%	2%	-2%	—	12%	—	2%	13%	—	6%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.32	2.74	25.9	38.2	0.08	0.94	4.55	5.49	0.87	1.06	1.93	—	10,011	10,011	0.31	0.71	10.2	10,240
Mit.	1.84	1.59	25.3	39.0	0.08	0.83	4.55	5.38	0.76	1.06	1.82	—	10,011	10,011	0.31	0.71	10.2	10,240
% Reduced	45%	42%	2%	-2%	—	12%	—	2%	13%	—	6%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	6.69	5.49	48.0	69.2	0.12	2.09	6.11	8.20	1.93	1.28	3.21	—	15,777	15,777	0.50	0.95	29.9	16,101
2023	37.8	31.3	285	510	0.92	10.4	55.3	65.7	9.66	12.8	22.5	—	132,527	132,527	3.93	9.25	312	135,695
2024	10.7	8.67	90.9	117	0.26	3.47	11.0	14.5	3.22	2.58	5.80	—	38,662	38,662	1.10	3.25	68.9	39,726
2025	3.74	3.03	33.3	44.1	0.11	1.19	4.01	5.20	1.11	0.97	2.08	—	15,400	15,400	0.40	1.31	26.4	15,828
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	27.7	23.0	218	290	0.55	8.34	32.0	40.4	7.71	7.28	15.0	—	76,769	76,769	2.51	5.01	4.68	78,328
2023	33.4	26.4	268	386	0.87	9.33	51.5	60.8	8.65	12.1	20.8	—	119,930	119,930	3.74	8.92	7.70	122,688
2024	21.1	17.1	176	234	0.46	6.05	31.2	37.3	5.61	7.32	12.9	—	77,621	77,621	1.78	5.99	4.53	79,453
2025	3.72	3.00	34.0	41.3	0.11	1.19	4.01	5.20	1.11	0.97	2.08	—	15,223	15,223	0.40	1.31	0.69	15,625
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	4.51	3.74	35.5	48.3	0.09	1.37	4.98	6.34	1.27	1.13	2.40	—	12,668	12,668	0.40	0.84	12.4	12,940

2023	18.2	15.0	142	210	0.44	5.15	24.9	30.1	4.77	5.79	10.6	—	60,469	60,469	1.87	4.26	61.7	61,848
2024	5.04	4.08	43.4	57.9	0.13	1.55	6.64	8.19	1.44	1.58	3.02	—	19,758	19,758	0.58	1.63	17.5	20,274
2025	0.81	0.65	7.33	9.12	0.02	0.26	0.86	1.12	0.24	0.21	0.45	—	3,318	3,318	0.09	0.29	2.48	3,407
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.82	0.68	6.48	8.82	0.02	0.25	0.91	1.16	0.23	0.21	0.44	—	2,097	2,097	0.07	0.14	2.05	2,142
2023	3.32	2.74	25.9	38.2	0.08	0.94	4.55	5.49	0.87	1.06	1.93	—	10,011	10,011	0.31	0.71	10.2	10,240
2024	0.92	0.74	7.93	10.6	0.02	0.28	1.21	1.50	0.26	0.29	0.55	—	3,271	3,271	0.10	0.27	2.89	3,357
2025	0.15	0.12	1.34	1.66	< 0.005	0.05	0.16	0.20	0.04	0.04	0.08	—	549	549	0.01	0.05	0.41	564

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	2.54	2.18	48.1	72.1	0.12	1.55	6.11	7.67	1.42	1.28	2.70	—	15,777	15,777	0.50	0.95	29.9	16,101
2023	21.1	18.3	282	519	0.92	9.28	55.3	64.6	8.51	12.8	21.3	—	132,527	132,527	3.93	9.25	312	135,695
2024	4.50	3.86	98.4	127	0.26	3.36	11.0	14.4	3.09	2.58	5.67	—	38,662	38,662	1.10	3.25	68.9	39,726
2025	1.66	1.43	39.0	48.7	0.11	1.36	4.01	5.37	1.25	0.97	2.22	—	15,400	15,400	0.40	1.31	26.4	15,828
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	13.8	12.0	203	293	0.55	6.53	32.0	38.6	5.97	7.28	13.3	—	76,769	76,769	2.51	5.01	4.68	78,328
2023	19.2	15.4	264	394	0.87	8.42	51.5	59.9	7.71	12.1	19.8	—	119,930	119,930	3.74	8.92	7.70	122,688
2024	11.8	9.92	179	242	0.46	5.83	31.2	37.0	5.34	7.32	12.7	—	77,621	77,621	1.78	5.99	4.53	79,453
2025	1.64	1.41	39.7	46.0	0.11	1.36	4.01	5.37	1.25	0.97	2.22	—	15,223	15,223	0.40	1.31	0.69	15,625
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	2.24	1.95	33.3	49.2	0.09	1.08	4.98	6.06	0.99	1.13	2.12	—	12,668	12,668	0.40	0.84	12.4	12,940

2023	10.1	8.71	139	213	0.44	4.55	24.9	29.5	4.17	5.79	9.96	—	60,469	60,469	1.87	4.26	61.7	61,848
2024	2.47	2.10	46.5	61.8	0.13	1.55	6.64	8.19	1.42	1.58	3.00	—	19,758	19,758	0.58	1.63	17.5	20,274
2025	0.36	0.31	8.57	10.1	0.02	0.30	0.86	1.16	0.27	0.21	0.48	—	3,318	3,318	0.09	0.29	2.48	3,407
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.41	0.36	6.07	8.97	0.02	0.20	0.91	1.11	0.18	0.21	0.39	—	2,097	2,097	0.07	0.14	2.05	2,142
2023	1.84	1.59	25.3	39.0	0.08	0.83	4.55	5.38	0.76	1.06	1.82	—	10,011	10,011	0.31	0.71	10.2	10,240
2024	0.45	0.38	8.49	11.3	0.02	0.28	1.21	1.49	0.26	0.29	0.55	—	3,271	3,271	0.10	0.27	2.89	3,357
2025	0.06	0.06	1.56	1.85	< 0.005	0.05	0.16	0.21	0.05	0.04	0.09	—	549	549	0.01	0.05	0.41	564

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.29	1.94	15.0	17.5	0.03	0.58	0.06	0.64	0.53	0.01	0.54	0.67	3,935	3,936	0.35	0.05	0.74	3,960
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.27	1.92	15.0	17.4	0.03	0.58	0.06	0.64	0.53	0.01	0.54	0.67	3,918	3,919	0.35	0.05	0.02	3,943
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.54	0.48	3.21	4.15	0.01	0.13	0.06	0.19	0.12	0.01	0.13	0.67	1,750	1,750	0.26	0.03	0.32	1,767
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.09	0.59	0.76	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	0.11	290	290	0.04	0.01	0.05	293

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.10	0.10	0.83	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	199	199	0.01	0.01	0.74	203
Area	0.01	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.29	1.94	15.0	17.5	0.03	0.58	0.06	0.64	0.53	0.01	0.54	0.67	3,935	3,936	0.35	0.05	0.74	3,960
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.11	0.70	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	182	182	0.01	0.01	0.02	186
Area	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.27	1.92	15.0	17.4	0.03	0.58	0.06	0.64	0.53	0.01	0.54	0.67	3,918	3,919	0.35	0.05	0.02	3,943
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.10	0.71	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	187	187	0.01	0.01	0.32	190
Area	< 0.005	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34

Off-Road	0.44	0.37	3.11	3.42	0.01	0.12	—	0.12	0.11	—	0.11	—	570	570	0.02	< 0.005	—	572
Total	0.54	0.48	3.21	4.15	0.01	0.13	0.06	0.19	0.12	0.01	0.13	0.67	1,750	1,750	0.26	0.03	0.32	1,767
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.02	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.0	31.0	< 0.005	< 0.005	0.05	31.5
Area	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	162	162	0.03	< 0.005	—	164
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Waste	—	—	—	—	—	—	—	—	—	—	—	0.11	0.00	0.11	0.01	0.00	—	0.39
Off-Road	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7
Total	0.10	0.09	0.59	0.76	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	0.11	290	290	0.04	0.01	0.05	293

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.10	0.10	0.83	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	199	199	0.01	0.01	0.74	203
Area	0.01	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.29	1.94	15.0	17.5	0.03	0.58	0.06	0.64	0.53	0.01	0.54	0.67	3,935	3,936	0.35	0.05	0.74	3,960
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.11	0.70	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	182	182	0.01	0.01	0.02	186
Area	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.27	1.92	15.0	17.4	0.03	0.58	0.06	0.64	0.53	0.01	0.54	0.67	3,918	3,919	0.35	0.05	0.02	3,943
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.10	0.71	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	187	187	0.01	0.01	0.32	190
Area	< 0.005	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Off-Road	0.44	0.37	3.11	3.42	0.01	0.12	—	0.12	0.11	—	0.11	—	570	570	0.02	< 0.005	—	572
Total	0.54	0.48	3.21	4.15	0.01	0.13	0.06	0.19	0.12	0.01	0.13	0.67	1,750	1,750	0.26	0.03	0.32	1,767
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.02	0.13	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.0	31.0	< 0.005	< 0.005	0.05	31.5
Area	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	162	162	0.03	< 0.005	—	164
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Waste	—	—	—	—	—	—	—	—	—	—	—	0.11	0.00	0.11	0.01	0.00	—	0.39
Off-Road	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7
Total	0.10	0.09	0.59	0.76	< 0.005	0.02	0.01	0.03	0.02	< 0.005	0.02	0.11	290	290	0.04	0.01	0.05	293

3. Construction Emissions Details

3.1. Site Preparation (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	2.89	23.7	26.8	0.04	1.26	—	1.26	1.16	—	1.16	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.03	0.02	0.47	0.31	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	79.7	79.7	0.01	0.01	0.06	83.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	2.89	23.7	26.8	0.04	1.26	—	1.26	1.16	—	1.16	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.03	0.02	0.49	0.32	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	80.4	80.4	0.01	0.01	< 0.005	84.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.36	2.93	3.30	< 0.005	0.16	—	0.16	0.14	—	0.14	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.04	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	9.86	9.86	< 0.005	< 0.005	< 0.005	10.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.07	0.53	0.60	< 0.005	0.03	—	0.03	0.03	—	0.03	—	81.2	81.2	< 0.005	< 0.005	—	81.5
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	< 0.005	1.71
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.49	0.92	15.4	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,453	2,453	0.08	0.07	11.4	2,487
Vendor	0.03	0.02	0.80	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	1.72	664
Hauling	0.03	0.02	1.08	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	1.98	869
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.45	1.12	10.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,163	2,163	0.08	0.07	0.30	2,187
Vendor	0.03	0.02	0.86	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	0.04	662
Hauling	0.03	0.02	1.15	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	0.05	867
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.12	1.39	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	277	277	0.01	0.01	0.61	280
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.2	78.2	< 0.005	0.01	0.09	81.7
Hauling	< 0.005	< 0.005	0.14	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.02	0.11	107
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	45.8	45.8	< 0.005	< 0.005	0.10	46.4
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.5
Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.02	17.7

3.2. Site Preparation (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.66	22.7	27.8	0.04	0.84	—	0.84	0.77	—	0.77	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.03	0.02	0.47	0.31	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	79.7	79.7	0.01	0.01	0.06	83.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.66	22.7	27.8	0.04	0.84	—	0.84	0.77	—	0.77	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.03	0.02	0.49	0.32	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	80.4	80.4	0.01	0.01	< 0.005	84.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.80	3.43	< 0.005	0.10	—	0.10	0.09	—	0.09	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.06	0.04	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	9.86	9.86	< 0.005	< 0.005	< 0.005	10.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.51	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	81.2	81.2	< 0.005	< 0.005	—	81.5
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	< 0.005	1.71
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.49	0.92	15.4	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,453	2,453	0.08	0.07	11.4	2,487
Vendor	0.03	0.02	0.80	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	1.72	664
Hauling	0.03	0.02	1.08	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	1.98	869
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.45	1.12	10.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,163	2,163	0.08	0.07	0.30	2,187
Vendor	0.03	0.02	0.86	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	0.04	662
Hauling	0.03	0.02	1.15	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	0.05	867
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.12	1.39	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	277	277	0.01	0.01	0.61	280
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.2	78.2	< 0.005	0.01	0.09	81.7
Hauling	< 0.005	< 0.005	0.14	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.02	0.11	107
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	45.8	45.8	< 0.005	< 0.005	0.10	46.4
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.5

Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.02	17.7

3.3. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	2.61	21.7	26.4	0.04	1.07	—	1.07	0.98	—	0.98	—	3,980	3,980	0.16	0.03	—	3,994
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.03	0.02	0.46	0.32	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	77.1	77.1	0.01	0.01	0.06	81.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	2.97	3.62	0.01	0.15	—	0.15	0.13	—	0.13	—	545	545	0.02	< 0.005	—	547
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.04	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	10.6	10.6	< 0.005	< 0.005	< 0.005	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.54	0.66	< 0.005	0.03	—	0.03	0.02	—	0.02	—	90.3	90.3	< 0.005	< 0.005	—	90.6

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.85
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.54	0.47	0.78	14.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,403	2,403	0.08	0.07	10.6	2,437
Vendor	0.03	0.02	0.65	0.17	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	626	626	0.01	0.09	1.72	656
Hauling	0.03	0.01	0.88	0.14	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	816	816	0.02	0.13	1.97	857
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.13	1.40	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	302	302	0.01	0.01	0.62	305
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	85.8	85.8	< 0.005	0.01	0.10	89.8
Hauling	< 0.005	< 0.005	0.13	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	112	112	< 0.005	0.02	0.12	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.9	49.9	< 0.005	< 0.005	0.10	50.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.02	19.4

3.4. Site Preparation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.66	22.7	27.8	0.04	0.84	—	0.84	0.77	—	0.77	—	3,980	3,980	0.16	0.03	—	3,994
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.03	0.02	0.46	0.32	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	77.1	77.1	0.01	0.01	0.06	81.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	3.11	3.81	0.01	0.12	—	0.12	0.11	—	0.11	—	545	545	0.02	< 0.005	—	547
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.04	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	10.6	10.6	< 0.005	< 0.005	< 0.005	11.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.57	0.70	< 0.005	0.02	—	0.02	0.02	—	0.02	—	90.3	90.3	< 0.005	< 0.005	—	90.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.76	1.76	< 0.005	< 0.005	< 0.005	1.85
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.54	0.47	0.78	14.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,403	2,403	0.08	0.07	10.6	2,437
Vendor	0.03	0.02	0.65	0.17	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	626	626	0.01	0.09	1.72	656
Hauling	0.03	0.01	0.88	0.14	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	816	816	0.02	0.13	1.97	857
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.13	1.40	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	302	302	0.01	0.01	0.62	305
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	85.8	85.8	< 0.005	0.01	0.10	89.8
Hauling	< 0.005	< 0.005	0.13	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	112	112	< 0.005	0.02	0.12	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.9	49.9	< 0.005	< 0.005	0.10	50.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.02	19.4

3.5. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.23	1.87	15.8	17.7	0.03	0.75	—	0.75	0.69	—	0.69	—	2,745	2,745	0.11	0.02	—	2,755

Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.26	0.18	< 0.005	< 0.005	0.50	0.50	< 0.005	0.05	0.05	—	44.1	44.1	< 0.005	0.01	0.03	46.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.78	1.99	< 0.005	0.08	—	0.08	0.08	—	0.08	—	308	308	0.01	< 0.005	—	309
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.98	4.98	< 0.005	< 0.005	< 0.005	5.24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.32	0.36	< 0.005	0.02	—	0.02	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.06	0.04	1.62	0.43	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,566	1,566	0.02	0.23	4.29	1,641
Hauling	0.06	0.02	1.77	0.28	0.02	0.03	0.43	0.46	0.03	0.12	0.15	—	1,632	1,632	0.03	0.25	3.94	1,713

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.77	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.34	167
Vendor	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.21	184
Hauling	0.01	< 0.005	0.21	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.19	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.06	27.6
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.03	30.5
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.4	30.4	< 0.005	< 0.005	0.03	31.8

3.6. Site Preparation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.58	15.7	18.8	0.03	0.59	—	0.59	0.54	—	0.54	—	2,745	2,745	0.11	0.02	—	2,755
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.26	0.18	< 0.005	< 0.005	0.50	0.50	< 0.005	0.05	0.05	—	44.1	44.1	< 0.005	0.01	0.03	46.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.77	2.11	< 0.005	0.07	—	0.07	0.06	—	0.06	—	308	308	0.01	< 0.005	—	309
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.98	4.98	< 0.005	< 0.005	< 0.005	5.24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.32	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.83	0.83	< 0.005	< 0.005	< 0.005	0.87
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.06	0.04	1.62	0.43	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,566	1,566	0.02	0.23	4.29	1,641
Hauling	0.06	0.02	1.77	0.28	0.02	0.03	0.43	0.46	0.03	0.12	0.15	—	1,632	1,632	0.03	0.25	3.94	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.77	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.34	167
Vendor	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.21	184

Hauling	0.01	< 0.005	0.21	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.19	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.06	27.6
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.03	30.5
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.4	30.4	< 0.005	< 0.005	0.03	31.8

3.7. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.09	1.76	14.9	17.6	0.03	0.68	—	0.68	0.63	—	0.63	—	2,747	2,747	0.11	0.02	—	2,756
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.20	0.14	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	32.4	32.4	< 0.005	0.01	0.03	34.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.68	1.98	< 0.005	0.08	—	0.08	0.07	—	0.07	—	309	309	0.01	< 0.005	—	310
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	3.66	3.66	< 0.005	< 0.005	< 0.005	3.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.3
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.06	0.03	1.53	0.38	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,543	1,543	0.02	0.22	4.29	1,614
Hauling	0.06	0.02	1.69	0.26	0.01	0.03	0.43	0.46	0.03	0.12	0.15	—	1,605	1,605	0.03	0.25	3.94	1,686
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.06	0.70	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	0.01	0.01	0.31	164
Vendor	0.01	< 0.005	0.18	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.02	0.21	181
Hauling	0.01	< 0.005	0.20	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	180	180	< 0.005	0.03	0.19	189
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.7	26.7	< 0.005	< 0.005	0.05	27.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.9	29.9	< 0.005	< 0.005	0.03	31.3

3.8. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.58	15.7	18.8	0.03	0.59	—	0.59	0.54	—	0.54	—	2,747	2,747	0.11	0.02	—	2,756
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.20	0.14	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	32.4	32.4	< 0.005	0.01	0.03	34.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.77	2.11	< 0.005	0.07	—	0.07	0.06	—	0.06	—	309	309	0.01	< 0.005	—	310
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	3.66	3.66	< 0.005	< 0.005	< 0.005	3.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.32	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.3

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.06	0.03	1.53	0.38	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,543	1,543	0.02	0.22	4.29	1,614
Hauling	0.06	0.02	1.69	0.26	0.01	0.03	0.43	0.46	0.03	0.12	0.15	—	1,605	1,605	0.03	0.25	3.94	1,686
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.06	0.70	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	0.01	0.01	0.31	164
Vendor	0.01	< 0.005	0.18	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.02	0.21	181
Hauling	0.01	< 0.005	0.20	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	180	180	< 0.005	0.03	0.19	189
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.7	26.7	< 0.005	< 0.005	0.05	27.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.9	29.9	< 0.005	< 0.005	0.03	31.3

3.9. Building Construction (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.03	1.71	15.9	17.3	0.03	0.74	—	0.74	0.68	—	0.68	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.17	0.11	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	28.5	28.5	< 0.005	< 0.005	0.02	29.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.03	1.71	15.9	17.3	0.03	0.74	—	0.74	0.68	—	0.68	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.18	0.11	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	28.7	28.7	< 0.005	< 0.005	< 0.005	30.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	4.90	5.31	0.01	0.23	—	0.23	0.21	—	0.21	—	933	933	0.04	0.01	—	936
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	8.78	8.78	< 0.005	< 0.005	< 0.005	9.21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.89	0.97	< 0.005	0.04	—	0.04	0.04	—	0.04	—	154	154	0.01	< 0.005	—	155
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.53
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.26	0.49	8.21	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,308	1,308	0.04	0.04	6.10	1,327
Vendor	0.05	0.03	1.20	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	2.58	996
Hauling	0.10	0.05	3.24	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	5.94	2,606

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.24	0.60	5.34	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,154	1,154	0.05	0.04	0.16	1,166
Vendor	0.05	0.03	1.29	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	0.07	993
Hauling	0.10	0.05	3.46	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	0.15	2,601
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.16	1.85	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	368	368	0.01	0.01	0.81	373
Vendor	0.02	0.01	0.39	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	292	292	< 0.005	0.04	0.34	305
Hauling	0.03	0.02	1.04	0.14	0.01	0.01	0.19	0.21	0.01	0.05	0.07	—	762	762	0.01	0.12	0.79	800
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.34	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.9	60.9	< 0.005	< 0.005	0.13	61.7
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.4	48.4	< 0.005	0.01	0.06	50.6
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.13	132

3.10. Building Construction (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.63	—	0.63	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.17	0.11	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	28.5	28.5	< 0.005	< 0.005	0.02	29.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.63	—	0.63	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.18	0.11	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	28.7	28.7	< 0.005	< 0.005	< 0.005	30.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.19	5.24	5.89	0.01	0.19	—	0.19	0.17	—	0.17	—	933	933	0.04	0.01	—	936
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	8.78	8.78	< 0.005	< 0.005	< 0.005	9.21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.96	1.08	< 0.005	0.04	—	0.04	0.03	—	0.03	—	154	154	0.01	< 0.005	—	155
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.53
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.26	0.49	8.21	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,308	1,308	0.04	0.04	6.10	1,327
Vendor	0.05	0.03	1.20	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	2.58	996
Hauling	0.10	0.05	3.24	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	5.94	2,606
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.24	0.60	5.34	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,154	1,154	0.05	0.04	0.16	1,166
Vendor	0.05	0.03	1.29	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	0.07	993
Hauling	0.10	0.05	3.46	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	0.15	2,601
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.16	1.85	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	368	368	0.01	0.01	0.81	373
Vendor	0.02	0.01	0.39	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	292	292	< 0.005	0.04	0.34	305

Hauling	0.03	0.02	1.04	0.14	0.01	0.01	0.19	0.21	0.01	0.05	0.07	—	762	762	0.01	0.12	0.79	800
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.34	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.9	60.9	< 0.005	< 0.005	0.13	61.7
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.4	48.4	< 0.005	0.01	0.06	50.6
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.13	132

3.11. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	1.58	14.7	16.8	0.03	0.64	—	0.64	0.59	—	0.59	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.16	0.11	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	27.5	27.5	< 0.005	< 0.005	0.02	29.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	1.58	14.7	16.8	0.03	0.64	—	0.64	0.59	—	0.59	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.17	0.12	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	28.0	28.0	< 0.005	< 0.005	< 0.005	29.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.35	4.96	0.01	0.19	—	0.19	0.17	—	0.17	—	897	897	0.04	0.01	—	900
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	8.19	8.19	< 0.005	< 0.005	< 0.005	8.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.09	0.79	0.91	< 0.005	0.03	—	0.03	0.03	—	0.03	—	148	148	0.01	< 0.005	—	149
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.36	1.36	< 0.005	< 0.005	< 0.005	1.43
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.42	7.48	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,282	1,282	0.04	0.04	5.65	1,300
Vendor	0.04	0.02	0.97	0.26	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	2.57	984
Hauling	0.08	0.04	2.65	0.42	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	5.92	2,570
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.19	0.53	4.85	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,131	1,131	0.04	0.04	0.15	1,144
Vendor	0.04	0.02	1.04	0.25	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	0.07	982
Hauling	0.08	0.03	2.82	0.41	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	0.15	2,564
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.14	1.61	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	347	347	0.01	0.01	0.72	351
Vendor	0.01	0.01	0.30	0.07	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	278	278	< 0.005	0.04	0.33	290
Hauling	0.02	0.01	0.82	0.12	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	724	724	0.01	0.11	0.76	758
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.03	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.4	57.4	< 0.005	< 0.005	0.12	58.2
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.0	46.0	< 0.005	0.01	0.05	48.1
Hauling	< 0.005	< 0.005	0.15	0.02	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	120	120	< 0.005	0.02	0.13	126

3.12. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.62	—	0.62	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.16	0.11	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	27.5	27.5	< 0.005	< 0.005	0.02	29.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.62	—	0.62	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.17	0.12	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	28.0	28.0	< 0.005	< 0.005	< 0.005	29.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	5.04	5.67	0.01	0.18	—	0.18	0.17	—	0.17	—	897	897	0.04	0.01	—	900
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	8.19	8.19	< 0.005	< 0.005	< 0.005	8.61
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.92	1.03	< 0.005	0.03	—	0.03	0.03	—	0.03	—	148	148	0.01	< 0.005	—	149
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.36	1.36	< 0.005	< 0.005	< 0.005	1.43
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.42	7.48	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,282	1,282	0.04	0.04	5.65	1,300
Vendor	0.04	0.02	0.97	0.26	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	2.57	984
Hauling	0.08	0.04	2.65	0.42	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	5.92	2,570

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.19	0.53	4.85	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,131	1,131	0.04	0.04	0.15	1,144
Vendor	0.04	0.02	1.04	0.25	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	0.07	982
Hauling	0.08	0.03	2.82	0.41	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	0.15	2,564
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.14	1.61	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	347	347	0.01	0.01	0.72	351
Vendor	0.01	0.01	0.30	0.07	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	278	278	< 0.005	0.04	0.33	290
Hauling	0.02	0.01	0.82	0.12	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	724	724	0.01	0.11	0.76	758
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.03	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.4	57.4	< 0.005	< 0.005	0.12	58.2
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.0	46.0	< 0.005	0.01	0.05	48.1
Hauling	< 0.005	< 0.005	0.15	0.02	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	120	120	< 0.005	0.02	0.13	126

3.13. Building Construction (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.61	5.55	60.4	71.9	0.11	2.65	—	2.65	2.43	—	2.43	—	11,222	11,222	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.53	0.34	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	86.1	86.1	0.01	0.01	< 0.005	90.3

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	8.75	10.4	0.02	0.38	—	0.38	0.35	—	0.35	—	1,625	1,625	0.07	0.01	—	1,631
Onsite truck	< 0.005	< 0.005	0.07	0.05	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	12.4	12.4	< 0.005	< 0.005	< 0.005	13.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.15	1.60	1.90	< 0.005	0.07	—	0.07	0.06	—	0.06	—	269	269	0.01	< 0.005	—	270
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.06	2.06	< 0.005	< 0.005	< 0.005	2.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.82	3.27	8.24	73.5	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,862	15,862	0.62	0.52	2.17	16,036
Vendor	0.25	0.15	6.45	1.49	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,754	4,754	0.07	0.70	0.33	4,965
Hauling	0.39	0.20	13.8	1.85	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,924	9,924	0.19	1.59	0.62	10,403
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.48	1.05	12.0	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,385	2,385	0.09	0.08	5.23	2,415
Vendor	0.04	0.02	0.91	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	688	688	0.01	0.10	0.81	720
Hauling	0.06	0.03	1.97	0.27	0.02	0.03	0.37	0.39	0.03	0.10	0.13	—	1,437	1,437	0.03	0.23	1.49	1,508
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.19	2.19	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	395	395	0.01	0.01	0.87	400
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.13	119
Hauling	0.01	0.01	0.36	0.05	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	238	238	< 0.005	0.04	0.25	250

3.14. Building Construction (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.11	—	2.11	—	11,222	11,222	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.53	0.34	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	86.1	86.1	0.01	0.01	< 0.005	90.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.33	8.44	10.7	0.02	0.34	—	0.34	0.31	—	0.31	—	1,625	1,625	0.07	0.01	—	1,631
Onsite truck	< 0.005	< 0.005	0.07	0.05	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	12.4	12.4	< 0.005	< 0.005	< 0.005	13.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.54	1.95	< 0.005	0.06	—	0.06	0.06	—	0.06	—	269	269	0.01	< 0.005	—	270
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.06	2.06	< 0.005	< 0.005	< 0.005	2.16
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	3.82	3.27	8.24	73.5	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,862	15,862	0.62	0.52	2.17	16,036
Vendor	0.25	0.15	6.45	1.49	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,754	4,754	0.07	0.70	0.33	4,965
Hauling	0.39	0.20	13.8	1.85	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,924	9,924	0.19	1.59	0.62	10,403
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.48	1.05	12.0	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,385	2,385	0.09	0.08	5.23	2,415
Vendor	0.04	0.02	0.91	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	688	688	0.01	0.10	0.81	720
Hauling	0.06	0.03	1.97	0.27	0.02	0.03	0.37	0.39	0.03	0.10	0.13	—	1,437	1,437	0.03	0.23	1.49	1,508
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.19	2.19	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	395	395	0.01	0.01	0.87	400
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.13	119
Hauling	0.01	0.01	0.36	0.05	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	238	238	< 0.005	0.04	0.25	250

3.15. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.49	0.34	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	82.6	82.6	0.01	0.01	0.06	86.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261

Onsite truck	0.03	0.02	0.52	0.36	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	84.0	84.0	0.01	0.01	< 0.005	88.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.40	2.85	30.8	38.6	0.06	1.30	—	1.30	1.19	—	1.19	—	6,084	6,084	0.25	0.05	—	6,104
Onsite truck	0.02	0.01	0.27	0.19	< 0.005	< 0.005	0.50	0.50	< 0.005	0.05	0.05	—	45.1	45.1	< 0.005	0.01	0.02	47.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.62	7.04	0.01	0.24	—	0.24	0.22	—	0.22	—	1,007	1,007	0.04	0.01	—	1,011
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	7.47	7.47	< 0.005	< 0.005	< 0.005	7.84
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.19	0.12	4.85	1.28	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,698	4,698	0.07	0.70	12.9	4,922
Hauling	0.33	0.14	10.6	1.67	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,795	9,795	0.19	1.53	23.7	10,279
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727
Vendor	0.19	0.11	5.19	1.26	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,699	4,699	0.07	0.70	0.33	4,910
Hauling	0.33	0.14	11.3	1.62	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,796	9,796	0.19	1.53	0.62	10,257
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.03	1.74	3.63	40.7	0.00	0.00	8.30	8.30	0.00	1.94	1.94	—	8,751	8,751	0.32	0.28	18.1	8,862
Vendor	0.10	0.06	2.76	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,547	2,547	0.04	0.38	3.02	2,664
Hauling	0.18	0.08	6.01	0.88	0.07	0.10	1.37	1.47	0.10	0.38	0.47	—	5,310	5,310	0.10	0.83	5.57	5,565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.37	0.32	0.66	7.43	0.00	0.00	1.52	1.52	0.00	0.35	0.35	—	1,449	1,449	0.05	0.05	3.00	1,467
Vendor	0.02	0.01	0.50	0.12	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	422	422	0.01	0.06	0.50	441
Hauling	0.03	0.01	1.10	0.16	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	879	879	0.02	0.14	0.92	921

3.16. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.49	0.34	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	82.6	82.6	0.01	0.01	0.06	86.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.52	0.36	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	84.0	84.0	0.01	0.01	< 0.005	88.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.23	31.6	39.9	0.06	1.26	—	1.26	1.14	—	1.14	—	6,084	6,084	0.25	0.05	—	6,104
Onsite truck	0.02	0.01	0.27	0.19	< 0.005	< 0.005	0.50	0.50	< 0.005	0.05	0.05	—	45.1	45.1	< 0.005	0.01	0.02	47.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	5.76	7.28	0.01	0.23	—	0.23	0.21	—	0.21	—	1,007	1,007	0.04	0.01	—	1,011

Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	7.47	7.47	< 0.005	< 0.005	< 0.005	7.84
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.19	0.12	4.85	1.28	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,698	4,698	0.07	0.70	12.9	4,922
Hauling	0.33	0.14	10.6	1.67	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,795	9,795	0.19	1.53	23.7	10,279
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727
Vendor	0.19	0.11	5.19	1.26	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,699	4,699	0.07	0.70	0.33	4,910
Hauling	0.33	0.14	11.3	1.62	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,796	9,796	0.19	1.53	0.62	10,257
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.03	1.74	3.63	40.7	0.00	0.00	8.30	8.30	0.00	1.94	1.94	—	8,751	8,751	0.32	0.28	18.1	8,862
Vendor	0.10	0.06	2.76	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,547	2,547	0.04	0.38	3.02	2,664
Hauling	0.18	0.08	6.01	0.88	0.07	0.10	1.37	1.47	0.10	0.38	0.47	—	5,310	5,310	0.10	0.83	5.57	5,565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.37	0.32	0.66	7.43	0.00	0.00	1.52	1.52	0.00	0.35	0.35	—	1,449	1,449	0.05	0.05	3.00	1,467
Vendor	0.02	0.01	0.50	0.12	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	422	422	0.01	0.06	0.50	441
Hauling	0.03	0.01	1.10	0.16	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	879	879	0.02	0.14	0.92	921

3.17. Building Construction (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.07	7.59	68.9	64.4	0.11	3.25	—	3.25	2.99	—	2.99	—	10,551	10,551	0.43	0.09	—	10,587
Onsite truck	0.04	0.03	0.70	0.46	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	115	115	0.01	0.02	< 0.005	120
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.47	1.23	11.2	10.5	0.02	0.53	—	0.53	0.49	—	0.49	—	1,714	1,714	0.07	0.01	—	1,720
Onsite truck	0.01	0.01	0.11	0.07	< 0.005	< 0.005	0.20	0.20	< 0.005	0.02	0.02	—	18.6	18.6	< 0.005	< 0.005	0.01	19.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.22	2.04	1.91	< 0.005	0.10	—	0.10	0.09	—	0.09	—	284	284	0.01	< 0.005	—	285
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	3.07	3.07	< 0.005	< 0.005	< 0.005	3.23
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.59	1.50	13.4	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,884	2,884	0.11	0.10	0.39	2,916
Vendor	0.10	0.06	2.58	0.60	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,902	1,902	0.03	0.28	0.13	1,986
Hauling	0.16	0.08	5.77	0.77	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,135	4,135	0.08	0.66	0.26	4,334
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.10	0.21	2.45	0.00	0.00	0.45	0.45	0.00	0.11	0.11	—	486	486	0.02	0.02	1.07	492
Vendor	0.02	0.01	0.41	0.10	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	309	309	< 0.005	0.05	0.36	323
Hauling	0.03	0.01	0.92	0.13	0.01	0.01	0.17	0.18	0.01	0.05	0.06	—	672	672	0.01	0.11	0.69	705
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.5	80.5	< 0.005	< 0.005	0.18	81.5
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	51.1	51.1	< 0.005	0.01	0.06	53.5
Hauling	< 0.005	< 0.005	0.17	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.12	117

3.18. Building Construction (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.57	3.21	55.9	63.5	0.11	2.31	—	2.31	2.09	—	2.09	—	10,551	10,551	0.43	0.09	—	10,587
Onsite truck	0.04	0.03	0.70	0.46	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	115	115	0.01	0.02	< 0.005	120
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.52	9.07	10.3	0.02	0.37	—	0.37	0.34	—	0.34	—	1,714	1,714	0.07	0.01	—	1,720
Onsite truck	0.01	0.01	0.11	0.07	< 0.005	< 0.005	0.20	0.20	< 0.005	0.02	0.02	—	18.6	18.6	< 0.005	< 0.005	0.01	19.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	1.66	1.88	< 0.005	0.07	—	0.07	0.06	—	0.06	—	284	284	0.01	< 0.005	—	285

Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	3.07	3.07	< 0.005	< 0.005	< 0.005	3.23
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.59	1.50	13.4	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,884	2,884	0.11	0.10	0.39	2,916
Vendor	0.10	0.06	2.58	0.60	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,902	1,902	0.03	0.28	0.13	1,986
Hauling	0.16	0.08	5.77	0.77	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,135	4,135	0.08	0.66	0.26	4,334
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.21	2.45	0.00	0.00	0.45	0.45	0.00	0.11	0.11	—	486	486	0.02	0.02	1.07	492
Vendor	0.02	0.01	0.41	0.10	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	309	309	< 0.005	0.05	0.36	323
Hauling	0.03	0.01	0.92	0.13	0.01	0.01	0.17	0.18	0.01	0.05	0.06	—	672	672	0.01	0.11	0.69	705
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.5	80.5	< 0.005	< 0.005	0.18	81.5
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	51.1	51.1	< 0.005	0.01	0.06	53.5
Hauling	< 0.005	< 0.005	0.17	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.12	117

3.19. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	8.54	7.15	63.6	63.1	0.11	2.94	—	2.94	2.70	—	2.70	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.05	0.03	0.65	0.46	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	110	110	0.01	0.02	0.09	116
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.54	7.15	63.6	63.1	0.11	2.94	—	2.94	2.70	—	2.70	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.04	0.03	0.69	0.47	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	112	112	0.01	0.02	< 0.005	118
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.61	2.18	19.4	19.3	0.03	0.90	—	0.90	0.82	—	0.82	—	3,221	3,221	0.13	0.03	—	3,232
Onsite truck	0.01	0.01	0.20	0.14	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	33.9	33.9	< 0.005	0.01	0.01	35.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.54	3.51	0.01	0.16	—	0.16	0.15	—	0.15	—	533	533	0.02	< 0.005	—	535
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.61	5.61	< 0.005	< 0.005	< 0.005	5.89
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860

Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.37	4.17	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	896	896	0.03	0.03	1.86	907
Vendor	0.02	0.01	0.62	0.15	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	574	574	0.01	0.09	0.68	600
Hauling	0.04	0.02	1.41	0.21	0.02	0.02	0.32	0.35	0.02	0.09	0.11	—	1,246	1,246	0.02	0.19	1.31	1,306
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.76	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	0.01	< 0.005	0.31	150
Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.0	95.0	< 0.005	0.01	0.11	99.4
Hauling	0.01	< 0.005	0.26	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.22	216

3.20. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.55	3.19	55.8	63.5	0.11	2.28	—	2.28	2.07	—	2.07	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.05	0.03	0.65	0.46	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	110	110	0.01	0.02	0.09	116
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.55	3.19	55.8	63.5	0.11	2.28	—	2.28	2.07	—	2.07	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.04	0.03	0.69	0.47	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	112	112	0.01	0.02	< 0.005	118

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.97	17.0	19.4	0.03	0.70	—	0.70	0.63	—	0.63	—	3,221	3,221	0.13	0.03	—	3,232
Onsite truck	0.01	0.01	0.20	0.14	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	33.9	33.9	< 0.005	0.01	0.01	35.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.18	3.11	3.54	0.01	0.13	—	0.13	0.12	—	0.12	—	533	533	0.02	< 0.005	—	535
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.61	5.61	< 0.005	< 0.005	< 0.005	5.89
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860
Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.37	4.17	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	896	896	0.03	0.03	1.86	907
Vendor	0.02	0.01	0.62	0.15	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	574	574	0.01	0.09	0.68	600
Hauling	0.04	0.02	1.41	0.21	0.02	0.02	0.32	0.35	0.02	0.09	0.11	—	1,246	1,246	0.02	0.19	1.31	1,306
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.76	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	0.01	< 0.005	0.31	150

Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.0	95.0	< 0.005	0.01	0.11	99.4
Hauling	0.01	< 0.005	0.26	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.22	216

3.21. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.49	0.34	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	82.6	82.6	0.01	0.01	0.06	86.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.52	0.36	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	84.0	84.0	0.01	0.01	< 0.005	88.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.23	1.87	20.2	25.4	0.04	0.85	—	0.85	0.78	—	0.78	—	3,997	3,997	0.16	0.03	—	4,011
Onsite truck	0.01	0.01	0.18	0.12	< 0.005	< 0.005	0.33	0.33	< 0.005	0.03	0.03	—	29.6	29.6	< 0.005	< 0.005	0.01	31.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	3.69	4.63	0.01	0.16	—	0.16	0.14	—	0.14	—	662	662	0.03	0.01	—	664
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.91	4.91	< 0.005	< 0.005	< 0.005	5.15

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.25	0.16	6.46	1.71	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,264	6,264	0.09	0.93	17.2	6,562
Hauling	0.44	0.19	14.1	2.23	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,060	13,060	0.25	2.04	31.6	13,705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727
Vendor	0.25	0.15	6.93	1.69	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,265	6,265	0.09	0.93	0.45	6,546
Hauling	0.44	0.18	15.0	2.16	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,061	13,061	0.25	2.04	0.82	13,675
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.14	2.39	26.8	0.00	0.00	5.46	5.46	0.00	1.28	1.28	—	5,750	5,750	0.21	0.19	11.9	5,823
Vendor	0.09	0.05	2.42	0.60	0.02	0.03	0.59	0.62	0.03	0.16	0.19	—	2,231	2,231	0.03	0.33	2.65	2,334
Hauling	0.16	0.07	5.27	0.77	0.06	0.09	1.20	1.29	0.09	0.33	0.42	—	4,652	4,652	0.09	0.73	4.88	4,875
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.21	0.44	4.88	0.00	0.00	1.00	1.00	0.00	0.23	0.23	—	952	952	0.03	0.03	1.97	964
Vendor	0.02	0.01	0.44	0.11	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	369	369	0.01	0.06	0.44	386
Hauling	0.03	0.01	0.96	0.14	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	770	770	0.01	0.12	0.81	807

3.22. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.49	0.34	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	82.6	82.6	0.01	0.01	0.06	86.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.03	0.02	0.52	0.36	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	84.0	84.0	0.01	0.01	< 0.005	88.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.84	0.81	20.7	26.2	0.04	0.83	—	0.83	0.75	—	0.75	—	3,997	3,997	0.16	0.03	—	4,011
Onsite truck	0.01	0.01	0.18	0.12	< 0.005	< 0.005	0.33	0.33	< 0.005	0.03	0.03	—	29.6	29.6	< 0.005	< 0.005	0.01	31.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	3.79	4.78	0.01	0.15	—	0.15	0.14	—	0.14	—	662	662	0.03	0.01	—	664
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.91	4.91	< 0.005	< 0.005	< 0.005	5.15
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.25	0.16	6.46	1.71	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,264	6,264	0.09	0.93	17.2	6,562
Hauling	0.44	0.19	14.1	2.23	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,060	13,060	0.25	2.04	31.6	13,705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727

Vendor	0.25	0.15	6.93	1.69	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,265	6,265	0.09	0.93	0.45	6,546
Hauling	0.44	0.18	15.0	2.16	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,061	13,061	0.25	2.04	0.82	13,675
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.14	2.39	26.8	0.00	0.00	5.46	5.46	0.00	1.28	1.28	—	5,750	5,750	0.21	0.19	11.9	5,823
Vendor	0.09	0.05	2.42	0.60	0.02	0.03	0.59	0.62	0.03	0.16	0.19	—	2,231	2,231	0.03	0.33	2.65	2,334
Hauling	0.16	0.07	5.27	0.77	0.06	0.09	1.20	1.29	0.09	0.33	0.42	—	4,652	4,652	0.09	0.73	4.88	4,875
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.21	0.44	4.88	0.00	0.00	1.00	1.00	0.00	0.23	0.23	—	952	952	0.03	0.03	1.97	964
Vendor	0.02	0.01	0.44	0.11	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	369	369	0.01	0.06	0.44	386
Hauling	0.03	0.01	0.96	0.14	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	770	770	0.01	0.12	0.81	807

3.23. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.84	4.90	52.9	69.7	0.11	2.11	—	2.11	1.94	—	1.94	—	11,213	11,213	0.45	0.09	—	11,252
Onsite truck	0.03	0.02	0.52	0.35	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	82.3	82.3	0.01	0.01	< 0.005	86.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.86	0.72	7.77	10.2	0.02	0.31	—	0.31	0.28	—	0.28	—	1,646	1,646	0.07	0.01	—	1,651

Onsite truck	< 0.005	< 0.005	0.07	0.05	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	12.0	12.0	< 0.005	< 0.005	< 0.005	12.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.42	1.87	< 0.005	0.06	—	0.06	0.05	—	0.05	—	272	272	0.01	< 0.005	—	273
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.11	2.57	6.72	60.8	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,240	15,240	0.12	0.52	1.84	15,401
Vendor	0.25	0.11	6.57	1.50	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,174	6,174	0.09	0.89	0.44	6,441
Hauling	0.44	0.18	14.5	2.08	0.08	0.24	3.41	3.65	0.24	0.93	1.18	—	12,845	12,845	0.25	2.04	0.82	13,459
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.38	0.84	10.0	0.00	0.00	2.25	2.25	0.00	0.53	0.53	—	2,321	2,321	0.09	0.08	4.50	2,351
Vendor	0.04	0.02	0.94	0.22	0.01	0.01	0.24	0.26	0.01	0.07	0.08	—	906	906	0.01	0.13	1.08	946
Hauling	0.06	0.03	2.09	0.30	0.01	0.04	0.50	0.53	0.04	0.14	0.17	—	1,885	1,885	0.04	0.30	1.99	1,977
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.15	1.83	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	384	384	0.01	0.01	0.74	389
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	150	150	< 0.005	0.02	0.18	157
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	312	312	0.01	0.05	0.33	327

3.24. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.36	2.27	58.2	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,213	11,213	0.45	0.09	—	11,252
Onsite truck	0.03	0.02	0.52	0.35	< 0.005	< 0.005	0.93	0.93	< 0.005	0.09	0.09	—	82.3	82.3	0.01	0.01	< 0.005	86.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.33	8.55	10.8	0.02	0.34	—	0.34	0.31	—	0.31	—	1,646	1,646	0.07	0.01	—	1,651
Onsite truck	< 0.005	< 0.005	0.07	0.05	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	12.0	12.0	< 0.005	< 0.005	< 0.005	12.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.56	1.97	< 0.005	0.06	—	0.06	0.06	—	0.06	—	272	272	0.01	< 0.005	—	273
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.08
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.11	2.57	6.72	60.8	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,240	15,240	0.12	0.52	1.84	15,401
Vendor	0.25	0.11	6.57	1.50	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,174	6,174	0.09	0.89	0.44	6,441
Hauling	0.44	0.18	14.5	2.08	0.08	0.24	3.41	3.65	0.24	0.93	1.18	—	12,845	12,845	0.25	2.04	0.82	13,459

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.38	0.84	10.0	0.00	0.00	2.25	2.25	0.00	0.53	0.53	—	2,321	2,321	0.09	0.08	4.50	2,351
Vendor	0.04	0.02	0.94	0.22	0.01	0.01	0.24	0.26	0.01	0.07	0.08	—	906	906	0.01	0.13	1.08	946
Hauling	0.06	0.03	2.09	0.30	0.01	0.04	0.50	0.53	0.04	0.14	0.17	—	1,885	1,885	0.04	0.30	1.99	1,977
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.15	1.83	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	384	384	0.01	0.01	0.74	389
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	150	150	< 0.005	0.02	0.18	157
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	312	312	0.01	0.05	0.33	327

3.25. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.93	5.79	52.5	46.6	0.08	2.34	—	2.34	2.15	—	2.15	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.05	0.03	0.65	0.46	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	110	110	0.01	0.02	0.09	116
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.93	5.79	52.5	46.6	0.08	2.34	—	2.34	2.15	—	2.15	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.04	0.03	0.69	0.47	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	112	112	0.01	0.02	< 0.005	118
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.66	2.22	20.1	17.9	0.03	0.90	—	0.90	0.83	—	0.83	—	3,038	3,038	0.12	0.02	—	3,048
Onsite truck	0.02	0.01	0.26	0.18	< 0.005	< 0.005	0.48	0.48	< 0.005	0.05	0.05	—	42.5	42.5	< 0.005	0.01	0.01	44.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.68	3.26	0.01	0.16	—	0.16	0.15	—	0.15	—	503	503	0.02	< 0.005	—	505
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	7.04	7.04	< 0.005	< 0.005	< 0.005	7.40
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860
Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.22	0.47	5.24	0.00	0.00	1.07	1.07	0.00	0.25	0.25	—	1,126	1,126	0.04	0.04	2.33	1,140
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	721	721	0.01	0.11	0.86	754
Hauling	0.05	0.02	1.77	0.26	0.02	0.03	0.40	0.43	0.03	0.11	0.14	—	1,565	1,565	0.03	0.24	1.64	1,641
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.09	0.96	0.00	0.00	0.19	0.19	0.00	0.05	0.05	—	186	186	0.01	0.01	0.39	189
Vendor	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	125
Hauling	0.01	< 0.005	0.32	0.05	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	259	259	< 0.005	0.04	0.27	272

3.26. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	2.74	44.2	45.0	0.08	1.73	—	1.73	1.57	—	1.57	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.05	0.03	0.65	0.46	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	110	110	0.01	0.02	0.09	116
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	2.74	44.2	45.0	0.08	1.73	—	1.73	1.57	—	1.57	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.04	0.03	0.69	0.47	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	112	112	0.01	0.02	< 0.005	118
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.05	16.9	17.2	0.03	0.67	—	0.67	0.60	—	0.60	—	3,038	3,038	0.12	0.02	—	3,048
Onsite truck	0.02	0.01	0.26	0.18	< 0.005	< 0.005	0.48	0.48	< 0.005	0.05	0.05	—	42.5	42.5	< 0.005	0.01	0.01	44.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	3.09	3.15	0.01	0.12	—	0.12	0.11	—	0.11	—	503	503	0.02	< 0.005	—	505
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	7.04	7.04	< 0.005	< 0.005	< 0.005	7.40
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860
Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.22	0.47	5.24	0.00	0.00	1.07	1.07	0.00	0.25	0.25	—	1,126	1,126	0.04	0.04	2.33	1,140
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	721	721	0.01	0.11	0.86	754
Hauling	0.05	0.02	1.77	0.26	0.02	0.03	0.40	0.43	0.03	0.11	0.14	—	1,565	1,565	0.03	0.24	1.64	1,641
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.09	0.96	0.00	0.00	0.19	0.19	0.00	0.05	0.05	—	186	186	0.01	0.01	0.39	189
Vendor	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	125
Hauling	0.01	< 0.005	0.32	0.05	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	259	259	< 0.005	0.04	0.27	272

3.27. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.57	5.50	49.2	44.9	0.08	2.14	—	2.14	1.97	—	1.97	—	7,919	7,919	0.32	0.06	—	7,946
Onsite truck	0.04	0.03	0.69	0.47	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	110	110	0.01	0.02	< 0.005	115
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.41	2.20	< 0.005	0.10	—	0.10	0.10	—	0.10	—	387	387	0.02	< 0.005	—	389
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	5.32	5.32	< 0.005	< 0.005	< 0.005	5.58
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	64.1	64.1	< 0.005	< 0.005	—	64.4
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.92
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.47	1.22	11.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,771	2,771	0.02	0.10	0.33	2,800
Vendor	0.07	0.03	1.97	0.45	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,852	1,852	0.03	0.27	0.13	1,932
Hauling	0.14	0.06	4.52	0.65	0.03	0.08	1.07	1.14	0.08	0.29	0.37	—	4,014	4,014	0.08	0.64	0.26	4,206
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	141	141	0.01	< 0.005	0.27	142
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.6	90.6	< 0.005	0.01	0.11	94.6
Hauling	0.01	< 0.005	0.22	0.03	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	196	196	< 0.005	0.03	0.21	206

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.3	23.3	< 0.005	< 0.005	0.05	23.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.7
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	0.01	0.03	34.1

3.28. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.08	2.73	44.1	44.9	0.08	1.72	—	1.72	1.56	—	1.56	—	7,919	7,919	0.32	0.06	—	7,946
Onsite truck	0.04	0.03	0.69	0.47	< 0.005	< 0.005	1.24	1.24	< 0.005	0.12	0.13	—	110	110	0.01	0.02	< 0.005	115
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	2.16	2.20	< 0.005	0.08	—	0.08	0.08	—	0.08	—	387	387	0.02	< 0.005	—	389
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	5.32	5.32	< 0.005	< 0.005	< 0.005	5.58
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.39	0.40	< 0.005	0.02	—	0.02	0.01	—	0.01	—	64.1	64.1	< 0.005	< 0.005	—	64.4
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.92
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.47	1.22	11.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,771	2,771	0.02	0.10	0.33	2,800
Vendor	0.07	0.03	1.97	0.45	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,852	1,852	0.03	0.27	0.13	1,932
Hauling	0.14	0.06	4.52	0.65	0.03	0.08	1.07	1.14	0.08	0.29	0.37	—	4,014	4,014	0.08	0.64	0.26	4,206
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	141	141	0.01	< 0.005	0.27	142
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.6	90.6	< 0.005	0.01	0.11	94.6
Hauling	0.01	< 0.005	0.22	0.03	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	196	196	< 0.005	0.03	0.21	206
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.3	23.3	< 0.005	< 0.005	0.05	23.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.7
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	0.01	0.03	34.1

3.29. Building Construction (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.68	3.09	29.0	35.0	0.05	1.37	—	1.37	1.26	—	1.26	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	38.6	38.6	< 0.005	0.01	0.03	40.5

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.68	3.09	29.0	35.0	0.05	1.37	—	1.37	1.26	—	1.26	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.01	0.01	0.24	0.17	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	39.2	39.2	< 0.005	0.01	< 0.005	41.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	8.28	10.0	0.02	0.39	—	0.39	0.36	—	0.36	—	1,683	1,683	0.07	0.01	—	1,689
Onsite truck	< 0.005	< 0.005	0.07	0.05	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	11.1	11.1	< 0.005	< 0.005	< 0.005	11.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.83	< 0.005	0.07	—	0.07	0.07	—	0.07	—	279	279	0.01	< 0.005	—	280
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.93
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.10	0.06	2.59	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	6.86	2,625
Hauling	0.19	0.08	6.18	0.98	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	13.8	5,996
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.24	0.66	6.06	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,414	1,414	0.06	0.05	0.18	1,430
Vendor	0.10	0.06	2.77	0.67	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	0.18	2,618
Hauling	0.19	0.08	6.58	0.95	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	0.36	5,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.08	0.17	1.95	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	419	419	0.02	0.01	0.87	425
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	716	716	0.01	0.11	0.85	749
Hauling	0.05	0.02	1.85	0.27	0.02	0.03	0.42	0.45	0.03	0.12	0.15	—	1,633	1,633	0.03	0.25	1.71	1,711
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.4	69.4	< 0.005	< 0.005	0.14	70.3
Vendor	0.01	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	124
Hauling	0.01	< 0.005	0.34	0.05	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	270	270	0.01	0.04	0.28	283

3.30. Building Construction (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	38.6	38.6	< 0.005	0.01	0.03	40.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.01	0.01	0.24	0.17	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	39.2	39.2	< 0.005	0.01	< 0.005	41.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.31	8.67	11.2	0.02	0.35	—	0.35	0.32	—	0.32	—	1,683	1,683	0.07	0.01	—	1,689

Onsite truck	< 0.005	< 0.005	0.07	0.05	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	11.1	11.1	< 0.005	< 0.005	< 0.005	11.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.58	2.05	< 0.005	0.06	—	0.06	0.06	—	0.06	—	279	279	0.01	< 0.005	—	280
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.93
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.10	0.06	2.59	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	6.86	2,625
Hauling	0.19	0.08	6.18	0.98	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	13.8	5,996
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.24	0.66	6.06	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,414	1,414	0.06	0.05	0.18	1,430
Vendor	0.10	0.06	2.77	0.67	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	0.18	2,618
Hauling	0.19	0.08	6.58	0.95	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	0.36	5,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.17	1.95	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	419	419	0.02	0.01	0.87	425
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	716	716	0.01	0.11	0.85	749
Hauling	0.05	0.02	1.85	0.27	0.02	0.03	0.42	0.45	0.03	0.12	0.15	—	1,633	1,633	0.03	0.25	1.71	1,711
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.4	69.4	< 0.005	< 0.005	0.14	70.3
Vendor	0.01	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	124
Hauling	0.01	< 0.005	0.34	0.05	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	270	270	0.01	0.04	0.28	283

3.31. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.8	37.8	< 0.005	0.01	0.03	39.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.01	0.01	0.24	0.17	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	38.4	38.4	< 0.005	0.01	< 0.005	40.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.96	11.6	0.02	0.41	—	0.41	0.38	—	0.38	—	1,959	1,959	0.08	0.02	—	1,966
Onsite truck	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	12.7	12.7	< 0.005	< 0.005	< 0.005	13.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.64	2.12	< 0.005	0.07	—	0.07	0.07	—	0.07	—	324	324	0.01	< 0.005	—	325
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	2.10	2.10	< 0.005	< 0.005	< 0.005	2.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400
Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.17	2.07	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	478	478	0.02	0.02	0.93	484
Vendor	0.03	0.01	0.86	0.20	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	821	821	0.01	0.12	0.98	858
Hauling	0.06	0.03	2.07	0.30	0.01	0.04	0.49	0.53	0.04	0.13	0.17	—	1,869	1,869	0.04	0.30	1.98	1,961
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.2	79.2	< 0.005	< 0.005	0.15	80.2
Vendor	0.01	< 0.005	0.16	0.04	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	< 0.005	0.02	0.16	142
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	309	309	0.01	0.05	0.33	325

3.32. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.8	37.8	< 0.005	0.01	0.03	39.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.01	0.01	0.24	0.17	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	38.4	38.4	< 0.005	0.01	< 0.005	40.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.36	10.1	13.1	0.02	0.41	—	0.41	0.37	—	0.37	—	1,959	1,959	0.08	0.02	—	1,966
Onsite truck	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	12.7	12.7	< 0.005	< 0.005	< 0.005	13.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.84	2.39	< 0.005	0.07	—	0.07	0.07	—	0.07	—	324	324	0.01	< 0.005	—	325
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	2.10	2.10	< 0.005	< 0.005	< 0.005	2.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400

Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.17	2.07	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	478	478	0.02	0.02	0.93	484
Vendor	0.03	0.01	0.86	0.20	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	821	821	0.01	0.12	0.98	858
Hauling	0.06	0.03	2.07	0.30	0.01	0.04	0.49	0.53	0.04	0.13	0.17	—	1,869	1,869	0.04	0.30	1.98	1,961
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.2	79.2	< 0.005	< 0.005	0.15	80.2
Vendor	0.01	< 0.005	0.16	0.04	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	< 0.005	0.02	0.16	142
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	309	309	0.01	0.05	0.33	325

3.33. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.8	37.8	< 0.005	0.01	0.03	39.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.01	0.01	0.24	0.17	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	38.4	38.4	< 0.005	0.01	< 0.005	40.4

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.39	1.16	10.8	14.0	0.02	0.49	—	0.49	0.45	—	0.45	—	2,362	2,362	0.10	0.02	—	2,370
Onsite truck	0.01	< 0.005	0.09	0.07	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	15.3	15.3	< 0.005	< 0.005	0.01	16.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.97	2.55	< 0.005	0.09	—	0.09	0.08	—	0.08	—	391	391	0.02	< 0.005	—	392
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	2.53	2.53	< 0.005	< 0.005	< 0.005	2.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400
Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.21	2.50	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	577	577	0.02	0.02	1.12	584
Vendor	0.04	0.02	1.03	0.24	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	991	991	0.02	0.14	1.18	1,035
Hauling	0.08	0.03	2.50	0.36	0.01	0.04	0.59	0.63	0.04	0.16	0.20	—	2,254	2,254	0.04	0.36	2.38	2,364
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.5	95.5	< 0.005	< 0.005	0.19	96.7

Vendor	0.01	< 0.005	0.19	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	164	164	< 0.005	0.02	0.20	171
Hauling	0.01	0.01	0.46	0.07	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	373	373	0.01	0.06	0.39	391

3.34. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.8	37.8	< 0.005	0.01	0.03	39.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.01	0.01	0.24	0.17	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	38.4	38.4	< 0.005	0.01	< 0.005	40.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.44	12.2	15.8	0.02	0.49	—	0.49	0.44	—	0.44	—	2,362	2,362	0.10	0.02	—	2,370
Onsite truck	0.01	< 0.005	0.09	0.07	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	15.3	15.3	< 0.005	< 0.005	0.01	16.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.22	2.88	< 0.005	0.09	—	0.09	0.08	—	0.08	—	391	391	0.02	< 0.005	—	392
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	2.53	2.53	< 0.005	< 0.005	< 0.005	2.65

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400
Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.21	2.50	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	577	577	0.02	0.02	1.12	584
Vendor	0.04	0.02	1.03	0.24	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	991	991	0.02	0.14	1.18	1,035
Hauling	0.08	0.03	2.50	0.36	0.01	0.04	0.59	0.63	0.04	0.16	0.20	—	2,254	2,254	0.04	0.36	2.38	2,364
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.5	95.5	< 0.005	< 0.005	0.19	96.7
Vendor	0.01	< 0.005	0.19	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	164	164	< 0.005	0.02	0.20	171
Hauling	0.01	0.01	0.46	0.07	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	373	373	0.01	0.06	0.39	391

3.35. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.19	2.68	24.6	34.7	0.05	1.05	—	1.05	0.96	—	0.96	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.0	37.0	< 0.005	0.01	0.03	38.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.19	2.68	24.6	34.7	0.05	1.05	—	1.05	0.96	—	0.96	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.01	0.01	0.24	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.6	37.6	< 0.005	0.01	< 0.005	39.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	7.53	0.01	0.23	—	0.23	0.21	—	0.21	—	1,280	1,280	0.05	0.01	—	1,284
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	8.10	8.10	< 0.005	< 0.005	< 0.005	8.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.37	< 0.005	0.04	—	0.04	0.04	—	0.04	—	212	212	0.01	< 0.005	—	213
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.43	7.79	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,536	1,536	0.01	0.05	5.90	1,556
Vendor	0.08	0.04	2.32	0.54	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	6.83	2,539
Hauling	0.16	0.05	5.72	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,510	5,510	0.11	0.86	13.7	5,782
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.22	0.52	5.05	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,357	1,357	0.01	0.05	0.15	1,371

Vendor	0.08	0.04	2.49	0.55	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	0.18	2,533
Hauling	0.16	0.05	6.12	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,511	5,511	0.11	0.86	0.35	5,769
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.10	1.24	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	306	306	< 0.005	0.01	0.55	309
Vendor	0.02	0.01	0.53	0.12	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	527	527	0.01	0.08	0.64	551
Hauling	0.03	0.01	1.30	0.20	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,197	1,197	0.02	0.19	1.28	1,254
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	50.6	50.6	< 0.005	< 0.005	0.09	51.2
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	87.2	87.2	< 0.005	0.01	0.11	91.2
Hauling	0.01	< 0.005	0.24	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	198	198	< 0.005	0.03	0.21	208

3.36. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.02	0.01	0.23	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.0	37.0	< 0.005	0.01	0.03	38.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.01	0.01	0.24	0.16	< 0.005	< 0.005	0.43	0.43	< 0.005	0.04	0.04	—	37.6	37.6	< 0.005	0.01	< 0.005	39.5

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.24	6.59	8.54	0.01	0.26	—	0.26	0.24	—	0.24	—	1,280	1,280	0.05	0.01	—	1,284
Onsite truck	< 0.005	< 0.005	0.05	0.04	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	8.10	8.10	< 0.005	< 0.005	< 0.005	8.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.20	1.56	< 0.005	0.05	—	0.05	0.04	—	0.04	—	212	212	0.01	< 0.005	—	213
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.41
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.43	7.79	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,536	1,536	0.01	0.05	5.90	1,556
Vendor	0.08	0.04	2.32	0.54	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	6.83	2,539
Hauling	0.16	0.05	5.72	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,510	5,510	0.11	0.86	13.7	5,782
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.22	0.52	5.05	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,357	1,357	0.01	0.05	0.15	1,371
Vendor	0.08	0.04	2.49	0.55	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	0.18	2,533
Hauling	0.16	0.05	6.12	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,511	5,511	0.11	0.86	0.35	5,769
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.10	1.24	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	306	306	< 0.005	0.01	0.55	309
Vendor	0.02	0.01	0.53	0.12	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	527	527	0.01	0.08	0.64	551
Hauling	0.03	0.01	1.30	0.20	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,197	1,197	0.02	0.19	1.28	1,254
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	50.6	50.6	< 0.005	< 0.005	0.09	51.2

Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	87.2	87.2	< 0.005	0.01	0.11	91.2
Hauling	0.01	< 0.005	0.24	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	198	198	< 0.005	0.03	0.21	208

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Total	0.01	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Total	0.01	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Total	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34

Total	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.11	0.00	0.11	0.01	0.00	—	0.39
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	0.00	0.11	0.01	0.00	—	0.39

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Total	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Total	—	—	—	—	—	—	—	—	—	—	—	0.67	0.00	0.67	0.07	0.00	—	2.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.11	0.00	0.11	0.01	0.00	—	0.39
Total	—	—	—	—	—	—	—	—	—	—	—	0.11	0.00	0.11	0.01	0.00	—	0.39

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819
Off-Highway Trucks	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819

Off-Highway	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.03	0.02	0.22	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.7	52.7	< 0.005	< 0.005	—	52.9
Generator Sets	0.01	0.01	0.10	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Pumps	0.04	0.03	0.25	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.6	29.6	< 0.005	< 0.005	—	29.7
Off-Highway Trucks	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.79	0.79	< 0.005	< 0.005	—	0.80
Total	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819

Off-Highway	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819
Off-Highway Trucks	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.03	0.02	0.22	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.7	52.7	< 0.005	< 0.005	—	52.9
Generator Sets	0.01	0.01	0.10	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Pumps	0.04	0.03	0.25	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.6	29.6	< 0.005	< 0.005	—	29.7
Off-Highway Trucks	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.79	0.79	< 0.005	< 0.005	—	0.80
Total	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Scarlet I: Site Preparation	Site Preparation	9/19/2022	11/18/2022	5.00	45.0	—
Scarlet II: Site Preparation	Site Preparation	6/12/2023	8/18/2023	5.00	50.0	—
Scarlet II: Energy Storage System Site Preparation	Site Preparation	6/12/2023	8/7/2023	5.00	41.0	—

Scarlet III: Energy Storage System Site Preparation	Site Preparation	4/15/2024	6/10/2024	5.00	41.0	—
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Building Construction	7/28/2022	5/31/2023	5.00	220	—
Scarlet I: Solar Facility - PV Module System Installation	Building Construction	10/19/2022	10/4/2023	5.00	251	—
Scarlet I: Solar Facility - Substation and Electrical System Installation	Building Construction	10/10/2022	6/5/2023	5.00	171	—
Scarlet II: Solar Facility - PV Module System Installation	Building Construction	7/3/2023	3/15/2024	5.00	185	—
Scarlet II: Solar Facility - Substation and Electrical System Installation	Building Construction	6/19/2023	1/25/2024	5.00	159	—
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Building Construction	8/8/2023	6/18/2024	5.00	226	—
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Building Construction	6/10/2024	4/21/2025	5.00	226	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Scarlet I: Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41

Scarlet I: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	7.00	84.0	0.37
Scarlet I: Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet I: Site Preparation	Rollers	Diesel	Average	8.00	7.00	36.0	0.38
Scarlet I: Site Preparation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet II: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	7.00	84.0	0.37
Scarlet II: Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet II: Site Preparation	Rollers	Diesel	Average	8.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet II: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet II: Energy Storage System Site Preparation	Rollers	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Excavators	Diesel	Average	2.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38

Scarlet III: Energy Storage System Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet III: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet III: Energy Storage System Site Preparation	Rollers	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Excavators	Diesel	Average	2.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Average	1.00	7.00	71.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Dumpers/Tenders	Diesel	Average	1.00	4.00	16.0	0.38

Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Average	2.00	7.00	83.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Average	2.00	7.00	40.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Average	1.00	7.00	46.0	0.31
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Average	20.0	7.00	71.0	0.37

Scarlet I: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Average	10.0	7.00	83.0	0.50
Scarlet I: Solar Facility - PV Module System Installation	Forklifts	Diesel	Average	8.00	6.00	82.0	0.20
Scarlet I: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Average	2.00	6.00	367	0.40
Scarlet I: Solar Facility - PV Module System Installation	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Average	2.00	7.00	367	0.40
Scarlet I: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Average	1.00	7.00	148	0.41
Scarlet I: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Average	1.00	7.00	71.0	0.37
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Average	7.00	7.00	150	0.36
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Average	1.00	7.00	36.0	0.38

Scarlet I: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74
Scarlet I: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Average	1.00	7.00	82.0	0.20
Scarlet I: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Average	2.00	7.00	83.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Average	1.00	7.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet I: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Average	2.00	4.00	367	0.29
Scarlet II: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Average	20.0	7.00	71.0	0.37
Scarlet II: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Average	10.0	7.00	83.0	0.50
Scarlet II: Solar Facility - PV Module System Installation	Forklifts	Diesel	Average	8.00	6.00	82.0	0.20
Scarlet II: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74

Scarlet II: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Average	2.00	6.00	367	0.40
Scarlet II: Solar Facility - PV Module System Installation	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Average	2.00	7.00	367	0.40
Scarlet II: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Average	1.00	7.00	148	0.41
Scarlet II: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Average	1.00	7.00	71.0	0.37
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Average	1.00	7.00	150	0.36
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74
Scarlet II: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Average	1.00	7.00	82.0	0.20
Scarlet II: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Average	2.00	7.00	83.0	0.50

Scarlet II: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Average	1.00	7.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Average	2.00	4.00	367	0.29
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Average	3.00	7.00	82.0	0.20
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Average	2.00	7.00	71.0	0.37
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Average	2.00	7.00	150	0.36

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Average	4.00	7.00	83.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Average	2.00	7.00	40.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Average	1.00	7.00	46.0	0.31

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Average	3.00	7.00	82.0	0.20
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Average	2.00	7.00	71.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Average	2.00	7.00	150	0.36
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Average	4.00	7.00	83.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Average	2.00	7.00	40.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Average	1.00	7.00	46.0	0.31
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Scarlet I: Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet I: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 3	4.00	7.00	84.0	0.37
Scarlet I: Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet I: Site Preparation	Rollers	Diesel	Tier 4 Interim	8.00	7.00	36.0	0.38
Scarlet I: Site Preparation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet II: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 3	4.00	7.00	84.0	0.37
Scarlet II: Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet II: Site Preparation	Rollers	Diesel	Tier 4 Interim	8.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet II: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet II: Energy Storage System Site Preparation	Rollers	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Excavators	Diesel	Tier 4 Interim	2.00	7.00	36.0	0.38

Scarlet II: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38
Scarlet III: Energy Storage System Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet III: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet III: Energy Storage System Site Preparation	Rollers	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Excavators	Diesel	Tier 4 Interim	2.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Tier 3	2.00	7.00	82.0	0.20
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	7.00	71.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38

Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Dumpers/Tenders	Diesel	Average	1.00	4.00	16.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	2.00	7.00	83.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	2.00	7.00	40.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Tier 3	1.00	7.00	84.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Tier 3	1.00	7.00	367	0.29
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Tier 4 Interim	1.00	7.00	46.0	0.31

Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	20.0	7.00	71.0	0.37
Scarlet I: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Tier 3	10.0	7.00	83.0	0.50
Scarlet I: Solar Facility - PV Module System Installation	Forklifts	Diesel	Tier 3	8.00	6.00	82.0	0.20
Scarlet I: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	6.00	367	0.40
Scarlet I: Solar Facility - PV Module System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	6.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	7.00	367	0.40
Scarlet I: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Tier 3	1.00	7.00	148	0.41
Scarlet I: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	7.00	71.0	0.37

Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	7.00	7.00	150	0.36
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet I: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74
Scarlet I: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Tier 3	1.00	7.00	82.0	0.20
Scarlet I: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	2.00	7.00	83.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	7.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet I: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Tier 3	2.00	4.00	367	0.29
Scarlet II: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	20.0	7.00	71.0	0.37
Scarlet II: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Tier 3	10.0	7.00	83.0	0.50

Scarlet II: Solar Facility - PV Module System Installation	Forklifts	Diesel	Tier 3	8.00	6.00	82.0	0.20
Scarlet II: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74
Scarlet II: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	6.00	367	0.40
Scarlet II: Solar Facility - PV Module System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	6.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	7.00	367	0.40
Scarlet II: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Tier 3	1.00	7.00	148	0.41
Scarlet II: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	7.00	71.0	0.37
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	1.00	7.00	150	0.36
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74

Scarlet II: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Tier 3	1.00	7.00	82.0	0.20
Scarlet II: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	2.00	7.00	83.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	7.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Tier 3	2.00	4.00	367	0.29
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Tier 3	3.00	7.00	82.0	0.20
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	7.00	71.0	0.37

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	2.00	7.00	150	0.36
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	4.00	7.00	83.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	2.00	7.00	40.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Tier 3	1.00	7.00	84.0	0.37
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Tier 3	1.00	7.00	367	0.29

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Tier 4 Interim	1.00	7.00	46.0	0.31
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Tier 3	3.00	7.00	82.0	0.20
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	7.00	71.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	2.00	7.00	150	0.36

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	4.00	7.00	83.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	2.00	7.00	40.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Tier 3	1.00	7.00	84.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Tier 3	1.00	7.00	367	0.29
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Tier 4 Interim	1.00	7.00	46.0	0.31

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Scarlet I: Site Preparation	—	—	—	—
Scarlet I: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet I: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet I: Site Preparation	Hauling	2.00	115	HHDT
Scarlet I: Site Preparation	Onsite truck	28.0	0.25	HHDT
Scarlet I: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet I: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - PV Module System Installation	Vendor	30.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - PV Module System Installation	Hauling	24.0	115	HHDT
Scarlet I: Solar Facility - PV Module System Installation	Onsite truck	30.0	0.25	HHDT
Scarlet II: Site Preparation	—	—	—	—
Scarlet II: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet II: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet II: Site Preparation	Hauling	2.00	115	HHDT
Scarlet II: Site Preparation	Onsite truck	28.0	0.25	HHDT

Scarlet II: Energy Storage System Site Preparation	—	—	—	—
Scarlet II: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet II: Energy Storage System Site Preparation	Onsite truck	16.0	0.25	HHDT
Scarlet III: Energy Storage System Site Preparation	—	—	—	—
Scarlet III: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet III: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT
Scarlet III: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet III: Energy Storage System Site Preparation	Onsite truck	12.0	0.25	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	32.0	50.0	LDA,LDT1,LDT2
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	6.00	50.0	HHDT,MHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	6.00	115	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	10.0	0.25	HHDT

Scarlet I: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet I: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	0.25	HHDT
Scarlet II: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet II: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - PV Module System Installation	Vendor	40.0	50.0	HHDT,MHDT
Scarlet II: Solar Facility - PV Module System Installation	Hauling	32.0	115	HHDT
Scarlet II: Solar Facility - PV Module System Installation	Onsite truck	30.0	0.25	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet II: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	0.25	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	0.25	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	0.25	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Scarlet I: Site Preparation	—	—	—	—
Scarlet I: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet I: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet I: Site Preparation	Hauling	2.00	115	HHDT

Scarlet I: Site Preparation	Onsite truck	28.0	0.25	HHDT
Scarlet I: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet I: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - PV Module System Installation	Vendor	30.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - PV Module System Installation	Hauling	24.0	115	HHDT
Scarlet I: Solar Facility - PV Module System Installation	Onsite truck	30.0	0.25	HHDT
Scarlet II: Site Preparation	—	—	—	—
Scarlet II: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet II: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet II: Site Preparation	Hauling	2.00	115	HHDT
Scarlet II: Site Preparation	Onsite truck	28.0	0.25	HHDT
Scarlet II: Energy Storage System Site Preparation	—	—	—	—
Scarlet II: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet II: Energy Storage System Site Preparation	Onsite truck	16.0	0.25	HHDT
Scarlet III: Energy Storage System Site Preparation	—	—	—	—
Scarlet III: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet III: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT

Scarlet III: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet III: Energy Storage System Site Preparation	Onsite truck	12.0	0.25	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	32.0	50.0	LDA,LDT1,LDT2
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	6.00	50.0	HHDT,MHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	6.00	115	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	10.0	0.25	HHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet I: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	0.25	HHDT
Scarlet II: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet II: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - PV Module System Installation	Vendor	40.0	50.0	HHDT,MHDT

Scarlet II: Solar Facility - PV Module System Installation	Hauling	32.0	115	HHDT
Scarlet II: Solar Facility - PV Module System Installation	Onsite truck	30.0	0.25	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet II: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	0.25	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	0.25	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	0.25	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Apply dust suppressants to unpaved roads	84%	84%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Scarlet I: Site Preparation	101,600	—	1,040	0.00	—
Scarlet II: Site Preparation	101,600	—	1,155	0.00	—
Scarlet II: Energy Storage System Site Preparation	22,880	—	947	0.00	—

Scarlet III: Energy Storage System Site Preparation	22,880	—	947	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2022	0.00	204	0.03	< 0.005
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	23.9	23.9	23.9	8,740	221	221	221	80,809

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	23.9	23.9	23.9	8,740	221	221	221	80,809

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	1,500	500	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	1,752,000	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	1,752,000	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	0.00	9,868,737

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	0.00	9,868,737

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	1.24	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	1.24	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Pumps	Diesel	Average	10.0	8.00	11.0	0.74
Off-Highway Trucks	Diesel	Average	4.00	4.00	50.0	0.38

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Pumps	Diesel	Average	10.0	8.00	11.0	0.74

Off-Highway Trucks	Diesel	Average	4.00	4.00	50.0	0.38

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	29.4	annual days of extreme heat
Extreme Precipitation	1.00	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	77.0
AQ-PM	86.1
AQ-DPM	23.1
Drinking Water	99.8
Lead Risk Housing	78.1
Pesticides	95.7
Toxic Releases	50.9
Traffic	1.57
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	92.6

Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	12.5
Solid Waste	63.7
Sensitive Population	—
Asthma	88.4
Cardio-vascular	66.8
Low Birth Weights	48.8
Socioeconomic Factor Indicators	—
Education	89.4
Housing	36.2
Linguistic	62.2
Poverty	87.3
Unemployment	82.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	5.633260619
Employed	10.49659951
Median HI	12.89618889
Education	—
Bachelor's or higher	15.47542666
High school enrollment	100
Preschool enrollment	31.75927114
Transportation	—
Auto Access	56.16578981

Active commuting	43.26960092
Social	—
2-parent households	63.64686257
Voting	30.63005261
Neighborhood	—
Alcohol availability	86.53920185
Park access	2.194276915
Retail density	1.244706788
Supermarket access	9.521365328
Tree canopy	1.411523162
Housing	—
Homeownership	24.61183113
Housing habitability	31.72077505
Low-inc homeowner severe housing cost burden	80.21301168
Low-inc renter severe housing cost burden	50.42987296
Uncrowded housing	24.97112794
Health Outcomes	—
Insured adults	18.50378545
Arthritis	0.0
Asthma ER Admissions	9.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	30.7

Cognitively Disabled	56.3
Physically Disabled	20.3
Heart Attack ER Admissions	13.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	65.5
English Speaking	18.6
Foreign-born	63.5
Outdoor Workers	0.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	98.3
Traffic Density	0.9
Traffic Access	0.0
Other Indices	—
Hardship	87.2

Other Decision Support	—
2016 Voting	28.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	86.0
Healthy Places Index Score for Project Location (b)	13.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on site plan.
Construction: Construction Phases	Based on applicant provided information.
Construction: Off-Road Equipment	Based on applicant provided information.
Construction: Trips and VMT	Based on applicant provided information.
Operations: Architectural Coatings	No architectural coating.

Operations: Energy Use	Electricity use for BESS.
Operations: Water and Waste Water	1,060 acre-feet of water used for construction and operation.
Operations: Refrigerants	No refrigerants.
Operations: Off-Road Equipment	Based on applicant provided information.
Construction: Dust From Material Movement	Based on applicant provided information.

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MEMORANDUM

To:	Patrick Cousineau
From:	Dylan Duvergé, PG No. 9244; Devin Pritchard-Peterson, PG No. 10133
Subject:	Addendum to Water Supply Assessment for Scarlet Solar Project
Date:	February 9, 2023
cc:	Alex Hardy
Attachment:	Attachment A - Water Supply Assessment RE Scarlet Solar Energy Project

The Scarlet Solar Project (Project) was the subject of an environmental impact report (EIR) prepared in compliance with the California Environmental Quality Act (CEQA), which was certified by the County of Fresno (County) Board of Supervisors in April 2022. Since that time, EDP Renewables North America (EDPR) has made design refinements to the project warranting an addendum to the EIR to assess environmental impacts relative to conclusions presented in the EIR. The design refinements include changes to the source and amount of water that was analyzed in the Water Supply Assessment (WSA) originally prepared in 2018 per Senate Bill (SB) 610 (attached).[1] While the construction-related water demand has been revised upward, the water required for operation and maintenance has been revised downwards, such that if water demand were amortized over the 20-year analysis period for SB 610, the overall water use of the Project remains unchanged. The purpose of this addendum is to supplement the information and analysis in the original WSA, as needed, to ensure compliance with SB 610 requirements and to support the EIR addendum.

In short, this addendum concludes that there is sufficient groundwater available to supply the Project's construction and operation and maintenance (O&M) water demands for at least the next 20 years, even in multiple-dry-year conditions, accounting for the changes to the source and amount of water analyzed in the WSA. This addendum also concludes that the Project's water use will not result in unsustainable groundwater use, based on prior estimates of basin sustainable yield and because it will be well below the sustainable yield thresholds set forth in the basin's groundwater sustainability plan (GSP) prepared pursuant to the Sustainable Groundwater Management Act (SGMA) of 2014.

1 Water Demand Source and Volume Changes

The certified EIR described the proposed source of water for construction as a well on the neighboring Tranquility Station site as well as water purchased from Westlands Water District (WWD) and delivered to the site by truck. The source of water that was originally proposed for O&M was not specific but assumed to be trucked from an offsite local water purveyor with sufficient capacity. EDPR now intends to reactivate one or more capped existing wells on

[1] Recurrent Energy Inc. 2018. *Water Supply Assessment RE Scarlet Solar Energy Project*. Prepared by Rincon Consultants, Inc. December 2018.

the project site[2] and use onsite groundwater for both construction and O&M purposes, with water from WWD secured through a municipal and industrial water agreement for up to 122 acre-feet (AF) for construction purposes. EDPR may also import or receive from off-site for O&M water. Thus, the primary change in terms of water supply source is to shift the groundwater source from offsite to onsite, which is environmentally preferable because it would reduce vehicle traffic and air pollutant emissions associated with water trucking. It also renders the discussion of offsite sources (i.e., City of Fresno and City of Mendota) and neighboring groundwater basins (i.e., Kings and Delta-Mendota Subbasins) in the original WSA unnecessary. The impacts of the Project's water use will be limited to the Westside Subbasin (Subbasin) of San Joaquin Groundwater Basin (DWR Basin No. 5-22.09).

In addition to changes in the source of water for the Project, the volume of water needed has also changed. As shown in Table 1, the amount of water that would be needed over the three phases of construction (approximately 2 years) has been revised upward to 650 AF from 360 AF originally, due in part to inclusion of grading and dust control requirements for the battery energy storage systems (BESS) and in part to a more conservative estimation method (e.g., inclusion of the 15% contingency). On the other hand, the long-term O&M water requirement has been revised downward to 5 acre-feet per year (AFY) from 20 AFY originally, due to a reduction in the frequency and volume of water needed for panel washing. When these water demands are amortized (i.e., averaged) over the 20-year planning period associated with SB 610, the water demand remains unchanged relative to the original WSA. When considering the longer term, beyond the 20-year horizon, these revisions result in a lower water demand than the original Project.

The focus of this WSA addendum is on the changes in source and volume of groundwater from the Westside Subbasin, because the original WSA adequately assessed the availability of water supply from WWD. With the use of a supplemental water agreement with WWD for 122 AF, there is sufficient water available to serve the Project's updated water demands. As described in additional detail in the original WSA, "It is reasonably assumed that the WWD would not use or distribute their allocated surface water supplies or available groundwater supplies in such a way that would be unsustainable to long-term water supply reliability, based on existing management programs. […] Construction demands would either be met using groundwater supplies, which are understood to recover from short-term periods of heavier pumping, or WWD provided water, which is managed by the WWD for long-term supply reliability. In either case, the WWD would assess and approve the use of this water."[3]

Table 1. Revised Project Water Demand

Project Phase	Schedule	PV Array	BESS	Total
Construction				
Phase 1	10 months	270	10 AF	280 AF
Phase 2	9 months	270	45 AF	315 AF
Phase 3	7 months	0 AF	55 AF	55 AF
Total Water Demand Over 2 Years		**440 AF**	**110 AF**	**650 AF** (revised up from 360 AF)
Post-Construction / Operation and Maintenance				
5 AFY (revised down from 20 AFY)				

[2] The well is located at the southwest corner of APN 028-071-47 in Section 21, Township 15S, Range 15E. The well Identification number is 15S/15E-21N02. The well was last used in November 2020. The well is capped and not currently active.

[3] Recurrent Energy Inc. 2018. *Water Supply Assessment RE Scarlet Solar Energy Project*. Prepared by Rincon Consultants, Inc. December 2018.

20-Year Amortized Demand (2 years construction + 18 years O&M)
740 AF / 20 Years = 37 AFY (unchanged)

Note: A 15% additional contingency was added to the construction water demand estimates; PV = photovoltaic; BESS = battery energy storage system; AF = acre-feet; AFY = acre-feet per year.

2 Water Planning Updates

Notable changes in the water management planning framework have occurred since publication of the original WSA for the Project. The 2014 SGMA legislation adopted an updated basin prioritization system that ranks groundwater basins as high, medium, low, or very low priority. The Westside Subbasin is identified as a high-priority basin in a state of critical overdraft.[4] Based on this determination, in January 2020, acting as the groundwater sustainability agencies (GSAs) for the Westside Subbasin, WWD and the County adopted a Final GSP, which outlines a path to achieve sustainable groundwater management in the Westside Subbasin within a 20-year period.[5] As mandated under GSP Regulation 354.24, the GSAs have established a "sustainability goal for the basin that culminates in the absence of undesirable results within 20 years of the applicable statutory deadline." Specifically, the sustainability goal establishes that the Westside Subbasin will be operated within its sustainable yield by 2040 and maintain sustainability through the entire planning and implementation horizon through 2070. The GSP sets forth active management strategies that may be pursued by the GSAs and stakeholders as authorized, as well as enforceable commitments to ensure its efficacy. These strategies include firming up access to more reliable surface water deliveries, conjunctive use, demand management through the adoption of an allocation system, improved efficiencies by transfer/trading, and surface water substitution within subsidence prone areas.

In an effort to address groundwater sustainability goals and measurable objectives, and to avoid causing undesirable results in the Subbasin, the GSP identifies and describes the following five projects and management actions (PMAs):

- Project No. 1 – Surface Water Imports
- Project No. 2 – Initial Allocation of Groundwater Extraction
- Project No. 3 – Aquifer Storage and Recovery
- Project No. 4 – Targeted Pumping Reductions
- Project No. 5 – Percolation Basins

This water management framework, i.e., implementation of the GSP for the Westside Subbasin, was not present when the original WSA was prepared. Because development and implementation of the GSP is required to achieve sustainable groundwater management by 2040, and because the Project's long-term water demand would be solely from wells that access groundwater from the Westside Subbasin, the statutory intent of SB 610 would be satisfied by demonstrating that the Project would not impede or conflict with the relevant aspects of the GSP. PMAs 1, 3, 4 and 5, as described in the GSP, would neither have a direct impact on the potential to pump on-site groundwater to supply the Project, nor would the project have any impact on the feasibility or efficacy of any of these PMAs. The

[4] DWR. 2020. Sustainable Groundwater Management Act 2019 Basin Prioritization – Process and Results. May 2020. Accessed September 2022. https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization.

[5] Luhdorff & Scalmanini. 2020. *Westside Subbasin Groundwater Sustainability Plan.* Prepared for Westlands Water District GSA and County of Fresno GSA. January 2020.

one PMA which is relevant to on-site groundwater pumping for project construction and/or O&M use would be Project No. 2 – Initial Allocation of Groundwater Extraction, which is addressed below in Section 3.

In January 2022, the California Department of Water Resources (DWR) determined that the Westside Subbasin GSP was "Incomplete" for lacking adequate information and directed WWD and the County to resubmit an updated plan by July 2022.[6] The GSAs resubmitted a revised GSP on July 18, 2022. However, DWR did not dispute the original GSP's PMAs—which are likely to be approved—so the GSP is still an appropriate water management framework under which to assess the Project's water supply pursuant to SB 610 and serves as an appropriate performance standard under CEQA.

Another recent development has been Executive Order N-7-22, which was adopted by California's Governor Gavin Newsom on March 28, 2022, in response to the State's ongoing drought conditions. The executive order includes limitations on constructing new wells or altering existing ones if the well at issue provides 2 AF per year or more of groundwater. The general limitation requires findings that extracting the groundwater (1) would not interfere with nearby wells and (2) is "not likely to cause subsidence that would adversely impact or damage nearby infrastructure." The executive order also includes a separate requirement for wells in a medium- or high-priority basin under the SGMA. There, the GSA must make written findings that the well would not (1) be inconsistent with the applicable GSP and (2) decrease the likelihood of achieving an applicable sustainability goal.

Although groundwater (either directly from on site or indirectly via WWD) is the sole source of water for the Project, this water will rely on existing wells and will not require any new well drilling, rehabilitation, or deepening, and thus would not trigger the need for a well drilling permit. The following section provides the rationale for why the Project's water use would not conflict with the applicable GSP or decrease the likelihood of achieving an applicable sustainability goal.

3 Groundwater Impact Analysis

For this analysis, the entire water demand of the Project is assumed to be supplied from onsite, and thus must be reviewed for its potential to impact groundwater resources and with its compatibility with the sustainable management criteria (SMC) and the PMAs outlined in the GSP for the Westside Subbasin. The original WSA evaluates supplemental construction water of up to 122 AF from offsite sources supplied by WWD. Each section below evaluates the project's water demand in the context of the GSP's SMC and PMAs.

There is no issue with regard to the physical ability of the site to supply the needed groundwater because there are numerous onsite wells and there are no real constraints on yield, since onsite wells were historically capable of supplying enough water for agricultural irrigation, even during multiple-year droughts. The SB 610 requirement to determine water sufficiency during multiple-year droughts are most impactful for projects that rely on surface water. However, groundwater levels can be expected to decline temporarily during severe droughts. If the onsite well(s) used by EDPR to supply the project suffer from a reduction or loss of yield, it will be a matter of switching to another onsite well(s) or deepening existing well(s), in coordination with WWD.

[6] California Department of Water Resources. 2022. "Incomplete" Determination of the 2020 Westside Subbasin Groundwater Sustainability Plan. January. Accessed February 2023. https://cawaterlibrary.net/wp-content/uploads/2022/03/Westside_Subbasin GSP2022 Determination.pdf

Sustainable Yield of the Westside Subbasin

Estimates of sustainable yield (i.e., the amount of groundwater that can be extracted annually without causing undesirable results) were developed by WWD as the GSA for the Westside Subbasin and published in the Final GSP. Using historical long-term average pumping and change in aquifer storage, under baseline conditions (using simulated average historical net lateral subsurface flow from 1989 through 2015 and projected net lateral flow from 2020 through 2070), the projected sustainable yield of the Subbasin is 269,000 AFY.[7] Using assumed 2030 climate change factors, the projected sustainable yield is 270,000 AFY, and using assumed 2070 climate change factors, the projected sustainable yield is 293,000 AFY. Previously, safe yield of the Westside Subbasin had been estimated by WWD to be approximately 200,000 AFY.[8] The short-term, temporary construction demand of the project (650 AF) is less than 0.25% of the estimated projected sustainable yield of the Subbasin under baseline conditions (269,000 AFY) published in the Final GSP, and approximately 0.33% of the previously estimated safe yield of the Subbasin (200,000 AFY). Both the short-term and long-term demand of the Project is such an insignificant fraction of the Westside Subbasin's sustainable yield that it would not have an adverse impact on total groundwater in storage.

GSP Project No. 2 – Groundwater Extraction Allocation

Based on DWR's basin prioritization finalized in 2019, the Westside Subbasin had yearly average groundwater use of 1.81 AF/acre[9], which is one of the major factors contributing to the subbasin's status as being in a state of critical overdraft. By comparison, the Project's average yearly per-acre groundwater use over the next 20 years would be less than 0.01 AF. GSP Project No. 2 (Initial Allocation of Groundwater Extraction) is a PMA that establishes terms of groundwater extraction allocation (AF/acre) which would provide each groundwater user with land overlying the Subbasin continued access to pump groundwater, in accordance with the allocation plan. The allocation plan will begin with the commencement of an 8-year transition period from 2022 through 2030 in which a uniform initial annual allocation is established at 1.3 AF/acre, which subsequently ramps down each year by 0.1 AF/acre until 2030, at which time the allocation would be 0.6 AF/acre.[10] During this transition period, the GSA will measure and track groundwater withdrawals during this transition period.

The Initial Allocation of Groundwater Extraction PMA is described in Section 4.2.1 of the GSP, which states that "Uniform distribution of the total Subbasin pumping among water users will be determined on a per-acre land ownership basis *for qualifying agricultural lands (qualifying lands do not include land that has been retired within the subbasin)."* Additionally, Section 4.2.1.1 of the GSP states "Land eligible for a groundwater allocation in the Subbasin totals up to approximately 525,000 acres *(excludes the District owned land) […]*." Based on the fact that the Project property is currently owned by WWD and is considered retired (i.e., is non-contracted land, has not received surface water for the last 10 years, does not currently receive surface water, and is explicitly excluded from surface water import in perpetuity per the Peck Settlement), the Project is not subject to the groundwater extraction allocation.[11] Therefore, it does not have a specific cap for groundwater use and is eligible to extract

7 Luhdorff & Scalmanini. 2020. *Westside Subbasin Groundwater Sustainability Plan*. Prepared for Westlands Water District GSA and County of Fresno GSA. January 2020.
8 Westlands Water District. 2013. *Water Management Plan 2012*. Published April 2013.
9 DWR. 2020. Sustainable Groundwater Management Act 2019 Basin Prioritization – Process and Results. May 2020. Accessed September 2022. https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization.
10 Luhdorff & Scalmanini. 2020. *Westside Subbasin Groundwater Sustainability Plan*. Prepared for Westlands Water District GSA and County of Fresno GSA. January 2020.
11 Article 2 of WWD's Rules and Regulations.

groundwater for reasonable and beneficial use so long as no water is wasted, and subject to WWD's rules and regulations pertaining to use of municipal and industrial water.[12] However, the allocation program is useful to compare project pumping to the maximum level of pumping that was determined in the GSP to be allowable without causing undesirable results.

As shown in Table 2, even in the circumstance where the groundwater allocation would apply to the Project, the initial allocation of 1.3 AF/acre would result in 5,290 AF of pumped groundwater available to the project in 2023 and 4,883 AF available in 2024, which would easily satisfy the construction demand of 650 AF over the approximate 2-year construction period. The most conservative groundwater allocation that could result due to the implementation of the GSP, 0.6 AF/acre at the end of the 8-year ramp down, would result in 2,441 AF of groundwater available to the Project annually during the O&M phase. This supply would be more than sufficient to satisfy the estimated maximum O&M demand of 5 AFY. As shown in Table 2, the Project's water demand, even if it were subject to the groundwater extraction allocation, would only extract 0.2% of the theoretical extraction allocation on a yearly basis in the long-term. Even if the GSA reduces the cap further in its adaptive management role during a periodic re-evaluation of GSP implementation (i.e., if needed to meet its long-term sustainability goal), the Project's extraction would have minimal impact. Although the GSP assumed the Project site to be retired, it represents less than 1% of the land area eligible for the groundwater allocation. Therefore, even though the Project site (being retired agricultural land) does not currently contribute to the groundwater overdraft condition, its Project-related contribution would be negligible when compared to the extraction that occurs throughout the Subbasin.

Table 2. Comparison of Groundwater Extraction Allocation to the Revised Project Water Demand

Year	Allocation Cap (AF / gross acre)	Theoretical Groundwater Extraction Allocation (AF)[1]	Estimated Water Demand (AF)	Percent of Allocation (AF)
2023	1.3	5,290	500[2]	9.5%
2024	1.2	4,883	150[2]	3.1%
2025	1.1	4,476	5	0.1%
2026	1.0	4,069	5	0.1%
2027	0.9	3,662	5	0.1%
2028	0.8	3,255	5	0.2%
2029	0.7	2,848	5	0.2%
2030	0.6	2,441	5	0.2%
2031	0.6	2,441	5	0.2%
2032	0.6	2,441	5	0.2%
2033	0.6	2,441	5	0.2%
2034	0.6	2,441	5	0.2%
2035	0.6	2,441	5	0.2%
2036	0.6	2,441	5	0.2%
2037	0.6	2,441	5	0.2%
2038	0.6	2,441	5	0.2%
2039	0.6	2,441	5	0.2%

[12] Article 19 of WWD's Rules and Regulations.

Table 2. Comparison of Groundwater Extraction Allocation to the Revised Project Water Demand

Year	Allocation Cap (AF / gross acre)	Theoretical Groundwater Extraction Allocation (AF)[1]	Estimated Water Demand (AF)	Percent of Allocation (AF)
2040	0.6	2,441	5	0.2%
2041	0.6	2,441	5	0.2%
2042	0.6	2,441	5	0.2%

Notes: AF = acre-feet.
1 Based on a project size of 4,069 acres (
2 The construction demand of 650 AF was split over two years based on construction phasing shown in Table 1.

Groundwater Levels in the Westside Subbasin

The GSP established minimum thresholds and measurable objectives (i.e., sustainable management criteria, or SMC) for a number of key monitoring wells throughout the Westside Subbasin to monitor its progress towards its sustainability goal. There are two representative monitoring wells near the Project site intended to measure groundwater levels in both the deep and shallow aquifer, and to assess whether they are meeting the objectives of the GSP. As shown in Table 3, Well No. 15S/15E-29K01, located about a half-mile south of the Project's southern boundary, measures compliance with SMCs in the lower aquifer, and Well No. 15S/15E-16K01, located about 0.4-miles north of the Project's northern boundary, measures compliance with SMCs in the upper aquifer. The most recent water level readings in these wells, shown in Table 3, indicate that neither are exceeding their minimum thresholds, and both are on track to meet their 5- and 10-year interim milestones. Given the Project's average yearly per-acre groundwater use over the next 20 years would be less than 0.01 AF and the onsite groundwater well used to supply the Project would be at least a half-mile away from these two representative monitoring wells, the Project's water use would have a negligible, if any, effect on water levels within them. The long-term water use of the project would be far less than what would occur if this land was used for rural residential uses (even with rural residential parcels of 40 acres) with domestic wells pumping less than 2 AFY, which SGMA has identified as de-minimis groundwater pumping. Conservatively assuming 40-acre parcels with single residences and 4 people per residence, the Project operational water demand would only be approximately 11% of that of the rural development[13]. If, over the GSP's implementation horizon, water levels in these wells do not meet the established SMCs, the GSA has outlined a number of management responses that could be taken to bring them back in line with their SMCs. For these reasons, the water use of the Project would not have any impact on the SMCs identified in the GSP for the nearest representative monitoring wells.

Table 3. Sustainable Management Criteria for Representative Monitoring Wells Near the Project Site

Aquifer	Well Name	Fall 2021 Water Level	5-Year Interim Milestone	10-Year Interim Milestone	15-Year Interim Milestone	Measurable Objective	Minimum Threshold
Lower	15S/15E-29K01	-178.4	-198.8	-179.2	-159.6	-140	-218.4

13 101 gal./person/day (How We Use Water | US EPA) x 4 people per residence x 102 residences = 41,208 gal/day x 365 days/year = 15,040,920 gal/year. 15,040,920 gal/325,851 gal/AF = 46.2 AFY. 5 AFY operational demand/46.2 x 100 = 11%.

Upper	15S/15E-16K01	108.1	88.4	100.2	112	123.8	76.6

Source: Luhdorff & Scalmanini 2020.
Notes: Units are water surface elevations in feet above mean sea level.

4 SB 610 Conclusions

Based on a review of available water supplies, groundwater conditions, and sustainability goals and objectives, this addendum to the original WSA has concluded the following:

- The Project has sufficient access to water through use of on-site groundwater to support both the construction and operations and maintenance demands of the Project over the next 20 years, even in multiple-dry-year conditions.
- The Project does not conflict with the applicable goals, SMC, and/or PMAs identified in the GSP prepared by WWD and the County because its long-term per-acre average yearly water demand is so low.

For the purposes of CEQA, this addendum to the original WSA supports a less than significant impact conclusion regarding water supply availability and groundwater resources.

Attachment A

Water Supply Assessment
RE Scarlet Solar Energy Project

Water Supply Assessment

RE Scarlet Solar Energy Project

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1 Introduction

Senate Bill 610 (SB 610) became effective on January 1, 2002, amending California Water Code to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA and meets certain requirements, each of which is discussed in detail in Section 3 of this WSA.

SB 610 was not originally clear on whether renewable energy developments are subject to SB 610 and require the preparation of a WSA. Senate Bill 267 (SB 267) was signed into law by California's Governor Brown on October 8, 2011, amending California's Water Law to revise the definition of "project" specified in SB 610. Under SB 267, wind and photovoltaic projects which consumed less than 75 acre-feet per year (AFY) of water were not considered to be a "project" under SB 610; subsequently, a WSA would not be required for this type of project. However, the renewable energy exclusions provided by SB 267 expired in January 2017. Since the language of SB 610 remains unclear on whether renewable energy projects meet the definition of a "project," this WSA takes a conservative approach and considers renewable energy projects to be subject to the requirements of SB 610.

Water requirements associated with the Scarlet Solar Energy Project ("Project" or "proposed Project") are described in Section 1.1 of this WSA, and include the following:

- Construction water demands would be met using groundwater obtained from an existing groundwater well located on the neighboring Tranquillity Solar Generating Station (Tranquillity Station) site. Both the proposed Project site and the Tranquillity Station site are located within the Westlands Water District (WWD) and overlie the Westside Subbasin of the San Joaquin Valley Groundwater Basin. Groundwater resources are characterized in Section 3 of this WSA.
- Operational and maintenance (O&M) water demands for the proposed Project would be obtained from either the City of Fresno or the City of Mendota, and trucked to the Project site on an as-needed basis. It is anticipated that O&M water would not be obtained from the Tranquillity Station site. These water sources are also characterized in Section 3 of this WSA.

When a WSA is required per California Water Code, it must examine the availability of an identified water supply under normal-year (no drought), single-dry-year (limited drought), and multiple-dry-year (extended drought) conditions over a 20-year projection, accounting for the projected water demand of the proposed Project in addition to other existing and planned future uses of the identified water supply, including agricultural and manufacturing uses. However, a common lack of data for groundwater usage and replenishment rates makes it difficult to estimate baseline conditions regarding water supply availability. Data availability is particularly of issue in the San Joaquin Valley area of California, where the proposed Project is located, due to a dominance of agricultural water users and a lack of consistent groundwater monitoring and reporting programs. Therefore, where data is not available to make quantitative estimates of water supply, reasonable assumptions are made based on available information and data.

The steps followed to ensure compliance of this WSA with California Water Code are described in Attachment A (DWR Guidebook for Implementation of Senate Bill 610 and Senate Bill 221).

1.1 Project Description

The proposed Scarlet Solar Energy Project is a photovoltaic (PV) electricity generating facility, which would generate up to 400 megawatts of alternating current (MW_{ac}) on approximately 4,069 acres in unincorporated Fresno County. Power generated by the proposed Project would be delivered to customers via an interconnection to the regional electricity grid at Pacific Gas and Electric Company's (PG&E) existing Tranquillity Station located just west of the Project site.

The solar facility would consist of the following primary components:

Solar arrays in different configuration, where each array includes PV panels and steel support structures, electrical inverters, transformers, cabling, and other infrastructure; two electrical substations; and other necessary infrastructure, including one permanent O&M building, septic system and leach field, supervisory control and data acquisition (SCADA) system, meteorological data system, buried conduit for electrical wires, overhead collector lines, on-site access roads, a shared busbar, other shared facilities, and wildlife-friendly security fencing. The project would also include up to 3.1 miles of 230 kV generator intertie (gen-tie) transmission line (from two substations) to connect to PG&E's Tranquillity Station, as well as a 400 MW energy storage system, consisting of battery or flywheel enclosures and electrical cabling.

1.1.1 Location and Land Uses

The proposed Project would be located in western Fresno County, approximately five miles southwest of the community of Tranquillity. Primary access to the Project site would be provided from Manning Avenue, an existing public road, and State Route (SR) 33. Figures 1 and 2 show groundwater basins and surface waters in the Project area, respectively.

Existing land uses on the Project site are characterized primarily by dry-farmed agriculture that has been intermittently irrigated. The Project site is designated as Exclusive Agriculture in the Fresno County General Plan (2000) and is zoned AE20 (Exclusive Agriculture, 20-acre minimum required). The property is currently owned by Westlands Water District (WWD).[1] Please see Figure 3.

For the past 10 years, the Project site has been intermittently utilized for low-yield agricultural production (tilled, seeded, and harvested for winter wheat); intermittently irrigated (drip or sprinkler) and harvested for alfalfa seed or other crops; or disced twice a year and left fallow. Soils and groundwater on the Project site are subject to high levels of selenium. Additionally, the local groundwater table does not provide for sufficient drainage for most commercially irrigated crops. Furthermore, the entire Project site is part of WWD settlements that require a non-irrigation covenant upon transfer of ownership. For the portion of the Project site that is cultivated without the benefit of irrigation, the productivity of these crops depends entirely on rainfall. When the unirrigated crops fail to mature to harvest, the land is grazed as rangeland grasses. There are no Williamson Act contracts binding any of the parcels.[2]

Existing land use surrounding the Project site is predominantly agricultural, consisting of fields (non-irrigated agricultural land) which are predominately owned by WWD, which keeps them in various states of low-value agricultural production. Roadways surrounding the Project site include West Dinuba Avenue and State Route 33 (West Derrick Avenue), both of which are paved, as well as South San Mateo Avenue

2 The Williamson Act (also known as the California Land Conservation Act of 1965) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. The contracted land is then restricted to agricultural and compatible uses through a rolling-term, 10 year contract between the private land owner and the local government.

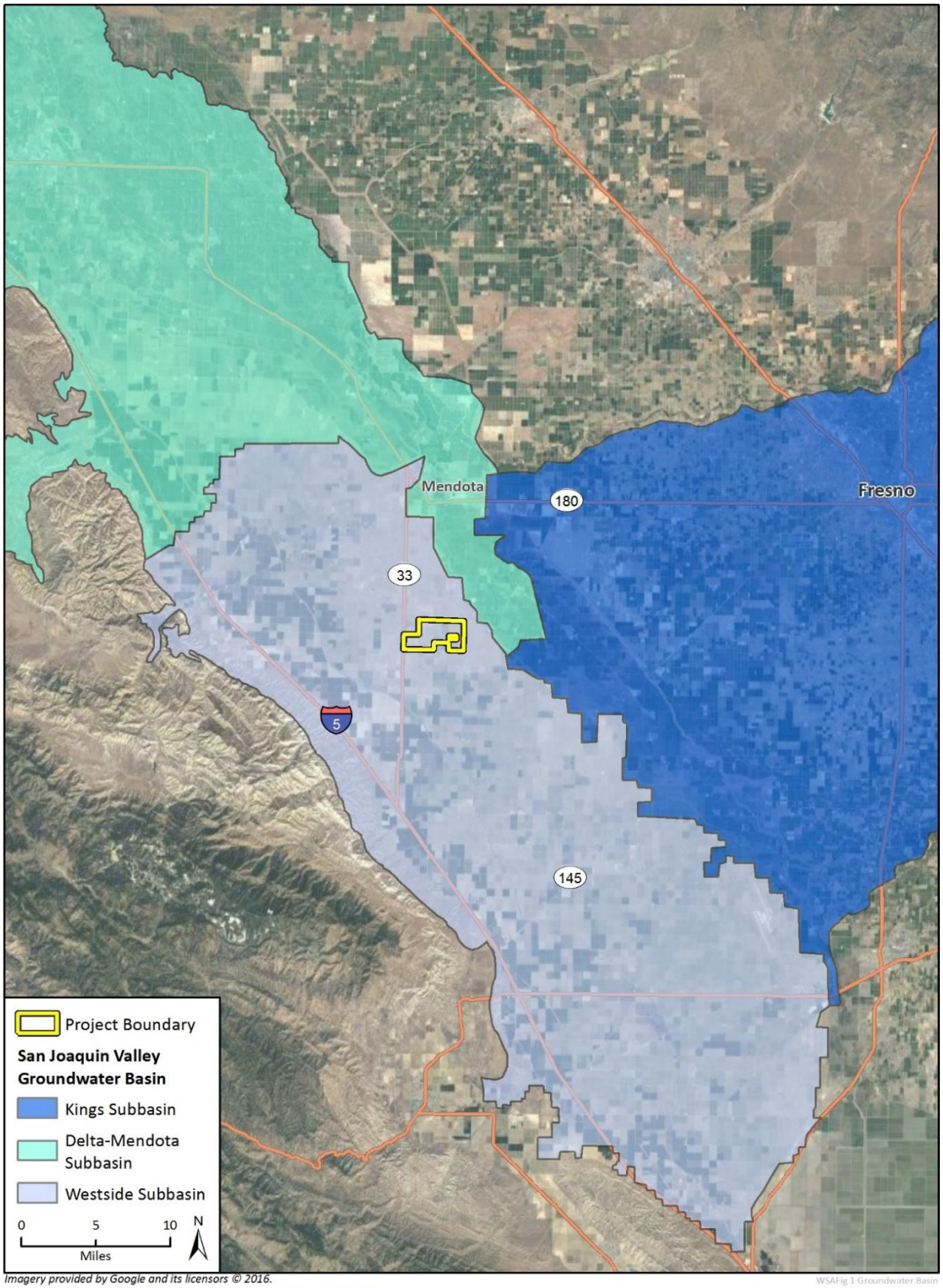
and West South Avenue, which are unpaved. These roads range between 15 feet and 50 feet in width and provide a buffer between the Project site and the parcels to the north, west, south, and east.

1.1.2 Construction Water

During construction of the Project, it is proposed that water would be obtained from an existing private well on the neighboring Tranquillity Station site, which is also within the WWD, or that water would be purchased from the WWD and trucked to the site from a local well source within five miles of the Project site. If grading and grubbing are required at the proposed Project site, it is anticipated that construction would require up to 360 acre-feet per year (AFY) of water for dust suppression, truck wheel washing, and miscellaneous purposes. If grading and grubbing are not required for implementation of the Project, construction water requirements would be reduced to 200 AFY (also for dust suppression, truck wheel washing, and miscellaneous purposes).

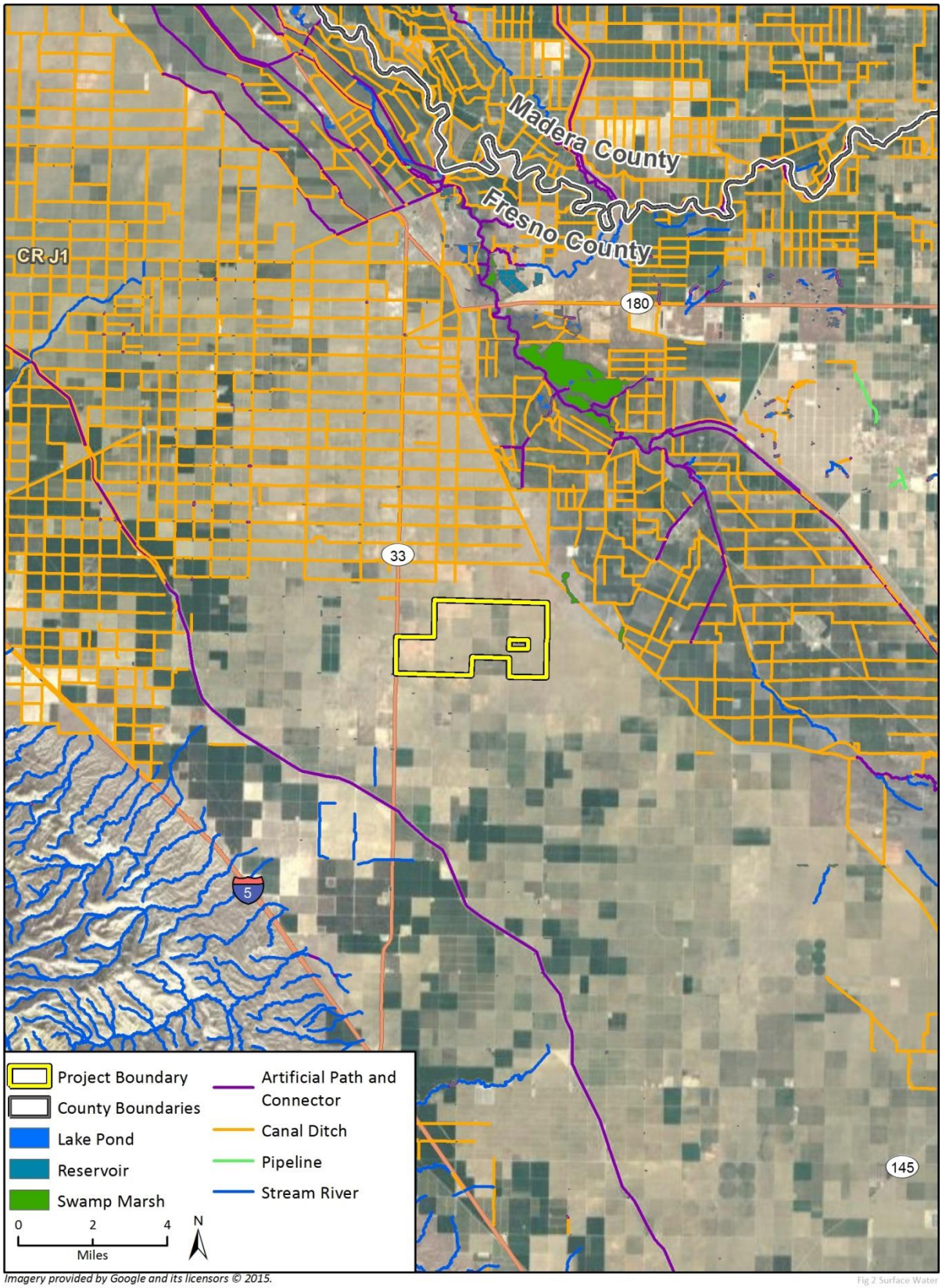
During construction, restroom facilities would be provided as portable units that would be serviced by licensed providers. Potable water for drinking and hand washing would be brought to the site by construction employees or by a bottled water service provider.

Figure 1 Groundwater Basins



Imagery provided by Google and its licensors © 2016.
Grounwater Basin Source: California Department of Water Resources, 2015.

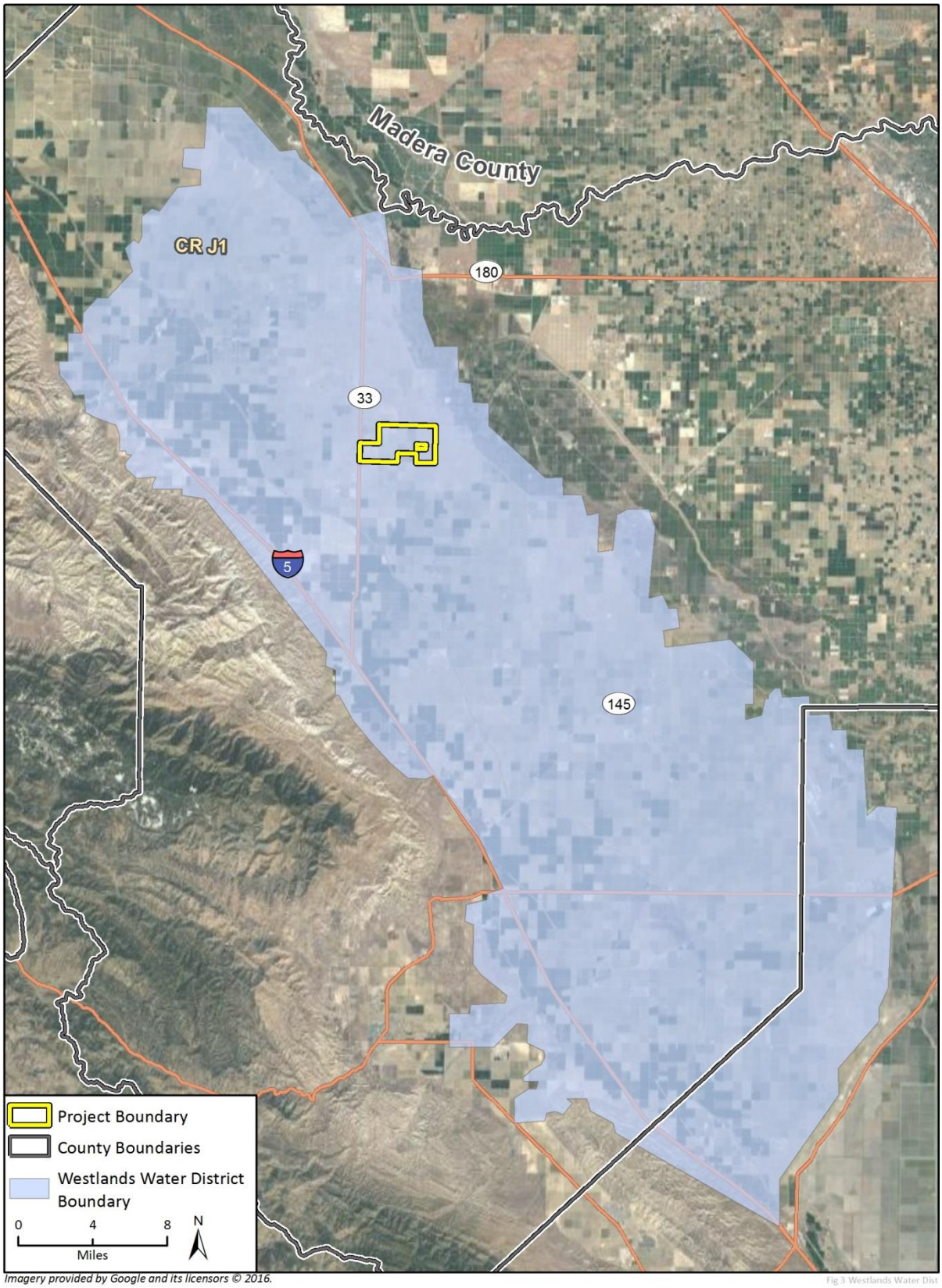
Figure 2 Surface Water



Imagery provided by Google and its licensors © 2015.
USGS National Hydrology Dataset v220, 2016.

Fig 2 Surface Water

Figure 3 Westlands Water District



1.1.3 Operational Water

During operation and maintenance of the Project, which would occur over the Project's lifetime, water would be required for panel washing and maintenance, for the O&M building restroom facilities, and the support of on-site sheep, and other miscellaneous water uses. Operational water requirements are described in Table 1.

Table 1 Operational Water Requirements

Project Component	Gallons per Year	Acre-Feet per Year
Panel Washing	4,800,000[1]	14.73
Washing equipment, hand washing, non-sanitary uses	500,000	1.53
Support on-site sheep and other misc. needs	1,200,000	3.68
Total	6,500,000	19.94

[1] Up to 1,200,000 gallons (3.7 acre-feet) of water would be used per panel washing event, with up to four panel washings required per year.

As shown in Table 1, operation and maintenance of the Project would require up to approximately 20 AFY of water across 3,575 acres. It is anticipated that operational water would be obtained from an off-site local water purveyor with sufficient capacity to provide the required supply, and trucked to the Project site. Potable water would be supplied to the O&M building for use in restroom and other facilities by a licensed provider.

Water used for panel washing may be treated through a portable truck-mounted filtration system to reduce total dissolved solids (TDS) concentrations; the Project would not include a reverse osmosis or other permanent water treatment system. Water for panel washing during operations may drip from panel surfaces and onto the underlying soils; panel washing would only occur during dry conditions, as rainwater has a similar effect as panel washing. All water used on-site during both construction and operations would be used in dry ambient conditions and in small enough quantities as to be absorbed into the upper layer of onsite soils and ultimately evaporated. Project-related water used on site does not have the potential to percolate into groundwater aquifers at the site.

A septic system and leach field would be installed adjacent to the O&M building to support the restroom facilities and sewage needs of the eight permanent staff working eight hours per day at the O&M building during operation. Personnel on-site to perform panel washing (up to four times per year) would be provided with portable restrooms serviced by a licensed provider. Anticipated peak flow is 600 gallons into the leach field per day during Project operation. No surface discharges are proposed, other than natural stormwater runoff. A Waste Discharge Permit would not be required from the Central Valley Regional Water Quality Control Board (RWQCB) because the Project would not exceed 2,500 gallons per day of sewage. The septic system would be permitted by the Fresno County Department of Public Works and Planning. The septic system and leach field testing procedures and design would meet all applicable specifications and regulations.

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2 Senate Bill 610 Applicability

Senate Bill 610 became effective in 2002 and amended the California Water Code to require a WSA to be completed for certain projects subject to CEQA, as discussed below in Sections 2.1 and 2.2. California Water Code Section 10910, as amended by SB 610, requires that a WSA must address the following questions: Is there a public water system that will service the proposed Project (Section 2.3); Is there a current UWMP that accounts for the project demand (Section 2.4); Is groundwater a component of the supplies for the project (Section 2.5); and are there sufficient supplies to serve the project over the next twenty years (Section 2.6). The primary question to be answered in a WSA is:

> *Will the total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?*

The following sections address the SB 610 WSA questions as they relate to the proposed Scarlet Solar Energy Project.

2.1 Is the Proposed Project Subject to CEQA?

California Water Code Section 10910(a) states that any city or county that determines that a project, as defined in Section 10912, is subject to CEQA, which applies to projects requiring an issuance of a discretionary permit by a public agency, projects undertaken by a public agency, or projects funded by a public agency. The proposed Project requires issuance of an Unclassified Conditional Use Permit (UCUP) by a public agency and is, therefore, subject to CEQA.

2.2 Is the Proposed Project a "Project" under SB 610?

California Water Code Section 10912(a) states that any proposed action which meets the definition of "project" is required to prepare a WSA to demonstrate whether sufficient water supplies are available to meet requirements of the proposed Project under normal and drought conditions. Water Code Section 10912 defines a "project" as any one of six different development types with certain water use requirements. Each identified development type and associated water requirements are addressed below. Any mixed-use project which incorporates one of the six development types described below is also defined as a "project."

Residential Development

A proposed residential development of more than 500 dwelling units is defined as a "project" under SB 610. The proposed Project is not a residential development.

Shopping Center or Business Establishment

A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space is defined as a "project" under SB 610. The proposed Project is not a shopping center or business establishment.

Commercial Office Building

A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space is defined as a "project" under SB 610. The proposed Project is not a commercial office building.

Hotel or Motel

A proposed hotel or motel, or both, having more than 500 rooms is defined as a "project" under SB 610. The proposed Project is not a hotel or motel.

Industrial, Manufacturing, or Processing Plant or Industrial Park

A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area is defined as a "project" under SB 610.

The proposed Project is not a manufacturing plant, processing plant, or industrial park. However, the proposed Project is an industrial facility occupying more than 40 acres and therefore it was conservatively determined that the proposed Project is considered a "project" under Water Code Section 10912. Therefore, this WSA has been prepared to satisfy the requirements of SB 610.

2.3 Is there a Public Water System that will Serve the Proposed Project?

California Water Code Section 10912 defines a "public water system" as a system that has 3,000 or more service connections and provides piped water to the public for human consumption. The proposed Scarlet Solar Energy Project is located within the jurisdiction of the WWD, which provides agricultural water to users within its jurisdiction and would provide the construction water for the proposed Project. The WWD does not deliver treated water for human consumption and is not considered a public water system.

Operational water demands for the proposed Project would be sourced from either the City of Fresno (Public Water System Number 1010007), or the City of Mendota. As of 2015, the City of Fresno had approximately 130,000 service connections (City of Fresno, 2016) and therefore constitutes a public water system. As of 2017, the City of Mendota had 1,911 service connections (City of Mendota, 2009) and therefore does not constitute a public water system.

2.4 Is there a Current UWMP that Accounts for the Project Demand?

Urban Water Management Plans (UWMPs) are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies. Every urban water supplier that either delivers more than 3,000 AFY of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year period under normal-, dry-, and multiple dry-year scenarios. UWMPs must be updated and submitted to the California Department of Water Resources (DWR) every five years for review and approval. (DWR, 2016)

Construction water demands for the proposed Project would be sourced from the WWD. The WWD does not supply over 3,000 customers with water for municipal purposes; therefore, the WWD is not considered an "urban water supplier" and is not required to submit an UWMP to the DWR. However, the

WWD has more than 3,000 agricultural connections, which are metered and maintained by WWD staff (WWD, 2012d).

Operational water would be provided by the City of Fresno or the City of Mendota. As noted above, the City of Mendota does not have more than 3,000 connections and is not required to have an UWMP in place. The City of Fresno, as a public water system, is required to submit an UWMP to the DWR. In June 2016, the City of Fresno adopted its 2015 UWMP (City of Fresno 2016), which provides updated demographics, historical water use by sector, and supply and demand forecasts under various hydrologic scenarios for the period 2015 through 2040. Demand forecasts are based on long-term demographic projections as well as billing data for major customer classes, conservation, and historic weather. The 2015 UWMP also provides a discussion of water supply reliability, demand management measures, and climate change related to water supply.

According to Water Code Section 10910 (c)(2), if the projected water demand associated with the proposed Project was accounted for in the most recently adopted UWMP, the water supplier may use the demand projections from the UWMP in preparing the WSA. This WSA Water Demand Report uses data provided in the City of Fresno's UWMP to assess water supply availability for the proposed Project. Although the proposed Project is not specifically identified in the UWMP, the UWMP accounts for the types of development constituted by the proposed Project, and the water availability projections provided therein are therefore appropriate to utilize for the purposes of this WSA.

2.5 Is Groundwater a Component of the Supplies for the Project?

Goundwater is a potential water supply for the proposed Project. The Project would require up to 360 AFY of water during construction, and approximately 20 AFY of water during operation and maintenance over the lifetime of the Project.

As noted in Section 1.1, the Project's construction water supply would be pumped from neighboring wells within the Westside Subbasin of the San Juaquin Valley Groundwater Basin, and/or delivered by the WWD to the Project site. Groundwater from the Westside Subbasin is the primary water supply source for the WWD.

The Project's operational water supplies may be sourced from the City of Fresno, which produces groundwater from the Kings Subbasin of the San Joaquin Valley Groundwater Basin, or the City of Mendota, which produces water from the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin.

For the purposes of this WSA, each potential water supply is addressed in the following sections, with respect to water supply reliability; however, it is important to note that Water Code Section 10910 specifically requires analysis of groundwater resources proposed to be used by a particular project, while the availability and reliability of water delivered by a purveyor such as the WWD, the City of Fresno, or the City of Mendota must be ensured by the respective purveyor.

2.6 Are there Sufficient Supplies to Serve the Project over the Next Twenty Years?

The sufficiency of water supplies identified as potential sources to serve the Project is assessed in the following sections, which address both groundwater and surface water supplies in the Project area.

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3 Impact Analysis

Construction water demands for the proposed Project would be met using groundwater pumped from the Westside Subbasin, which is managed by the WWD. Operational water demands for the proposed Project would be met via water from the City of Fresno or the City of Mendota. The following sections examine these water supplies and their capacity to provide the water needed to meet the construction and operational demands of the proposed Project.

3.1 Westlands Water District

Formed in 1952, the WWD is the largest agricultural water district in the United States. Historically, groundwater was the only water supply source used to irrigate nearly all land within the current WWD boundaries. In 1963, the WWD entered into a water supply contract with the United States Bureau of Reclamation (USBR) for surface water supplies from the Central Valley Project (CVP). Currently, the WWD relies on both local groundwater and imported CVP surface supplies to meet the water demands of its customers. (WWD, 2012)

Table 2 shows the WWD's historical water production from 1988 to 2016.

Table 2 Westlands Water District – Historical Water Production

Water Year	CVP Allocation %	Net CVP (AF)	Groundwater (AF)	Water User Acquired (AF)	Additional District Supply (AF)	Total Supply (AF)	Fallowed Acres
1988	100%	1,150,000	160,000	7,657	97,712	1,415,369	45,632
1989	100%	1,035,369	175,000	20,530	99,549	1,330,448	64,579
1990	50%	625,196	300,000	18,502	(2,223)	941,475	52,544
1991	27%	229,666	600,000	22,943	77,399	930,008	125,082
1992	27%	208,668	600,000	42,623	100,861	952,152	112,718
1992	54%	682,833	225,000	152,520	82,511	1,142,864	90,413
1994	43%	458,281	325,000	56,541	108,083	947,905	75,732
1995	100%	1,021,719	150,000	57,840	121,747	1,351,306	43,528
1996	95%	994,935	50,000	92,953	172,609	1,310,497	26,754
1997	90%	968,408	30,000	94,908	261,085	1,354,401	35,554
1998	100%	945,115	15,000	54,205	162,684	1,177,004	33,481
1999	70%	806,040	60,000	178,632	111,144	1,155,816	37,206
2000	65%	695,693	225,000	198,294	133,314	1,252,301	46,748
2001	49%	611,267	215,000	75,592	135,039	1,036,898	73,802
2002	70%	776,526	205,000	106,043	64,040	1,151,609	94,557
2003	75%	863,150	160,000	107,958	32,518	1,163,626	76,654
2004	70%	800,704	210,000	96,872	44,407	1,151,983	70,367
2005	85%	996,147	75,000	20,776	98,347	1,190,270	66,804
2006	100%	1,076,461	25,000	45,936	38,079	1,185,476	54,944
2007	50%	647,864	310,000	87,554	61,466	1,106,884	96,409
2008	40%	347,222	460,000	85,421	102,862	995,505	99,663
2009	10%	202,991	480,000	68,070	70,149	821,210	156,239
2010	45%	590,059	140,000	71,296	79,242	880,597	131,339
2011	80%	876,910	45,000	60,380	191,686	1,173,976	59,514
2012	40%	405,451	355,000	111,154	123,636	995,241	112,755
2013	20%	188,448	638.000	101,413	143,962	1,071,823	131,848
2014	0%	98,573	655,000	59,714	26,382	839,669	220,053
2015	0%	82,429	660,000	55,656	34,600	832,685	218,112
2016*	5%	69,745	550,000	55,000	202,900	877,645	225,000

Definitions:

Water Year = March 1 – February 28

CVP Allocation = Final CVP water supply allocation for Water Year (100% = 1,150,000 AFY)+(Reassignment = 49,948 AF)

Net CVP = CVP allocation adjusted for carry over and rescheduled losses

Groundwater = Total groundwater pumped

Water User Acquired = Private landowner water transfers

Additional District Supply = Surplus water, supplemental supplies, and other adjustments

Fallowed acres = Agricultural land out of production

Source: WWD, 2015b

Currently, the WWD's annual contract entitlement from USBR's CVP is 1.15 million acre-feet. The annual safe yield of the underlying confined groundwater aquifer in the Westside Subbasin of the San Joaquin Valley Groundwater Basin adds about another 200,000 acre-feet. As is shown in Table 2, the WWD does not receive 100 percent of its allocated CVP water supplies each year. Gaps in water supplies are supplemented via additional district supply.

The following sections assess sources of water utilized by the WWD, as well as water conservation efforts and groundwater management undertaken by the District.

3.1.1 Westside Subbasin, San Joaquin Valley Groundwater Basin

The Westside Subbasin of the San Joaquin Valley Groundwater Basin underlies the Project site and the WWD. The Westside Subbasin is located in western Fresno County, encompassing a surface area of approximately 640,000 acres (1,000 square miles) within central California's San Joaquin Valley. To the west of the San Joaquin Valley are the Coast Ranges, to the south are the San Emigdio and Tehachapi Mountains, to the east are the Sierra Nevada Mountains, and to the north is the Sacramento-San Joaquin Delta and Sacramento Valley. The San Joaquin River and its tributaries, including the Fresno, Merced, Tuolumne, and Stanislaus Rivers, drain the northern portion of the San Joaquin Valley toward the Delta. The Kings, Kaweah, Tule, and Kern Rivers drain the southern portion of the valley internally towards the Tulare drainage basin. (DWR, 2006a)

Climate in this area is semi-arid, with long, hot, dry summers and relatively mild winters. Average annual precipitation varies across the subbasin from seven inches in the south to nine inches in the north.

Basin Characteristics

Within the San Joaquin Valley, the Westside Subbasin is located between the Coast Range foothills on the west and the San Joaquin River and Fresno Slough on the east. To the southwest is the Pleasant Valley Groundwater Subbasin, and to the west are Tertiary marine sediments of the Coast Ranges. To the north and northeast is the Delta-Mendota Groundwater Subbasin, and to the east and southeast are the Kings and Tulare Lake Groundwater Subbasins, also subbasins of the San Joaquin Valley Groundwater Basin. Most of the Westside Subbasin consists of lands within WWD. (DWR, 2006a)

WATER-BEARING FEATURES

The Westside Subbasin consists of Tertiary- and Quaternary-age unconsolidated continental deposits which form an unconfined to semi-confined upper aquifer and a confined lower aquifer. The upper and lower aquifers, described below, are separated by an aquitard named the Corcoran Clay member of the Tulare Formation.

- **Upper Aquifer.** The unconfined to semi-confined aquifer includes younger alluvium, older alluvium, and part of the Tulare Formation. These deposits consist of highly lenticular, poorly sorted clay, silt, and sand intercalated with occasional beds of well-sorted fine to medium grained sand. The depth to the top of the Corcoran Clay (thickness of the upper aquifer) varies from approximately 500 feet to 850 feet. Upper Aquifer water quality is largely affected by historic and long-term irrigation practices, discussed further below under "Water Quality and Drainage Considerations". (DWR, 2006a)
- **Lower Aquifer.** The confined aquifer consists of the lower part of the Tulare Formation and locally the uppermost part of the San Joaquin Formation. This unit is composed of lenticular beds of silty clay, clay, silt, and sand interbedded with occasional strata of well-sorted sand. Brackish or saline water occurs in older marine sedimentary rock that underlies the usable groundwater in the Lower Aquifer. Water quality considerations are further discussed below, under "Water Quality and Drainage Considerations". (DWR, 2006a)

The Corcoran Clay is a lacustrine diatomaceous clay unit that is laterally extensive across underlies much of the subbasin and varies in thickness between 20 and 120 feet. Prior to groundwater development in the Westside Subbasin, the low-permeability Corcoran Clay effectively separated the upper and lower aquifer zones. Wells now penetrate the clay and have allowed partial hydraulic connection between the zones.

Recharge and Connectivity

Recharge to the Westside Subbasin occurs primarily through seepage of surface waters comprised of Coast Range streams along the west side of the subbasin, as well as the deep percolation of surface irrigation. Subsurface flows from the east and northeast may also contribute to groundwater recharge, although subsurface flows are strongly influenced by groundwater pumping activities and therefore inconsistent and difficult to characterize. Groundwater discharge from the Westside Subbasin has occurred primarily by pumping for agricultural uses, evapotranspiration, and seepage to the San Joaquin River.

Over the past 40 years, recharge to the Westside Subbasin has increased dramatically due to the importation of the USBR CVP irrigation water by the WWD. Irrigated agriculture has altered both groundwater flow (recharge/connectivity) and quality (discussed below, under "Water Quality and Drainage Considerations"). Irrigation recharge has increased groundwater storage and has caused the water table to rise within the Upper Aquifer. Groundwater movement (direction of migration) is primarily downward, resulting from the combined response to deep percolation of irrigation water and groundwater pumping from deep water supply wells. Essentially, irrigation water seeps into the soils while groundwater is pumped from both aquifer levels, drawing groundwater downward as recharge increases. From an area-wide perspective, much more water moves in the vertical direction than horizontally, and groundwater level and quality impacts in any given field occur primarily as the result of irrigation of the field. (USBR, 2006)

Drainage systems (and groundwater pumping) prevent both saturation and salt accumulation in the root zone (USBR, 2006); by removing groundwater from the subsurface, either by allowing it to migrate through the area by installing artificial drainage features or by removing it through pumping, saturation of the subsurface is alleviated because the overall volume of groundwater in the specific area is decreased, and subsequently salt accumulation is also alleviated because high-TDS waters are removed from the subsurface. As a result of ongoing drainage issues and in an attempt to minimize recharge to the Westside Subbasin thereby alleviating worsening water quality issues, irrigation has not been permitted on the Project site for more than 10 years; therefore, irrigation to the Westside Subbasin from this portion of the subbasin area does not currently contribute to groundwater recharge. Consequently, only natural groundwater recharge in this portion of the Westside Subbasin (deep infiltration of precipitation and stream flow).

Groundwater Level Trends

Groundwater levels in the Westside Subbasin respond directly to the intensity of pumping throughout the basin, as well as the intensity of precipitation and surface flows contributing to recharge. As previously noted, the Project site (and majority of the Westside Subbasin) is located within the jurisdiction of the WWD, which delivers water to agricultural users primarily from groundwater and CVP water. The WWD produces an annual report on deep groundwater conditions, including assessment of groundwater elevation (depth to groundwater), as well as how much water is pumped in relation to how much of the CVP allocation is received. Between 2008 and 2012, the WWD received an average of 469,850 AFY in CVP allocations, approximately 43 percent of total allocations, and pumped a total of 1,480,000 acre-feet of groundwater, or an average of 296,000 AFY (WWD, 2015c). Over these five years the groundwater surface elevation increased by 12 feet. However, in 2012, WWD received just 40

percent (460,000 acre-feet) of the full CVP allocation and pumped 355,000 acre-feet of groundwater to supplement supplies during the continued drought; as a result, the groundwater elevation decreased by 48 feet to an average elevation of one foot above mean sea level (WWD, 2015c). Table 3, below, provides a history of groundwater elevation compared to pumping intensity. As indicated in Table 3, groundwater pumping increased in the most recent three years of reported monitoring (2013 – 2015); this increased rate of pumping coincides with long-term drought conditions which have affected water supplies throughout California, including the amount of surface water supplies that are delivered via projects such as the CVP. As drought conditions continue to improve, it is anticipated that CVP delivers will increase and the intensity of groundwater pumping will decrease for areas such as the WWD service territory.

Table 3 Westlands Water District – Groundwater Use and Groundwater Elevation Change*

Crop Year	Pumped AF	Elevation FT	Elevation Change FT	Crop Year	Pumped AF	Elevation FT	Elevation Change FT
1956	964.000	-65	-13	1986	145,000	71	8
1957	928,000	-56	9	1987	159,000	89	18
1958	884,000	-29	27	1988	160,000	64	-25
1959	912,000	-77	-48	1989	175,000	63	-1
1960	872,000	-81	-4	1990	300,000	9	-54
1961	824,000	-96	-15	1991	600,000	-32	-41
1962	920,000	–	–	1992	600,000	-62	-30
1963	883,000	–	–	1993	225,000	1	63
1964	913,000	–	–	1994	325,000	-51	-52
1965	822,000	–	–	1995	150,000	27	78
1966	924,000	-134	–	1996	50,000	49	22
1967	875,000	-156	-22	1997	30,000	63	14
1968	596,000	-135	21	1998	15,000	63	0
1969	592,000	-120	15	1999	20,000	65	2
1970	460,000	-100	20	2000	225,000	43	-22
1971	377,000	-93	7	2001	215,000	25	-18
1972	–	-54	39	2002	205,000	22	-3
1973	–	-37	17	2003	160,000	30	8
1974	96,000	-22	15	2004	210,000	24	-6
1975	111,000	-11	11	2005	75,000	56	32
1976	97,000	-2	9	2006	15,000	77	21
1977	472,000	-99	-97	2007	310,000	35	-42
1978	159,000	-4	95	2008	460,000	-11	-46
1979	140,000	-13	-9	2009	480,000	-31	-20
1980	106,000	4	17	2010	140,000	9	40
1981	99,000	11	7	2011	45,000	49	40
1982	105,000	32	21	2012	355,000	1	-48
1983	31,000	56	24	2013	638,000	-58	-59
1984	73,000	61	5	2014	655,000	-76	-18
1985	228,000	63	2	2015	660,000	-120	-44

* Crop year is from 1 October (previous year) to 30 September (current year) for the year in question.

* Starting with 2012 the amount of groundwater pumped is for Water Year (March 1 through February 28).

* Data compiled from PG&E power records by USBR through 1971 and USGS 1974-1987, District estimates 1988- present. Elevation data for 1943-1961 and 1977 from Bill Coor, USBR (requested by the District and received on 4/20/1978) and elevation for 1966-1976 from Plate 5 of "Project Effects on Sub-Corcoran Water Layers" (April 1977).

Source: WWD, 2015c

Table 3 indicates that, while the groundwater elevation consistently falls during years of more intense pumping, it also consistently recovers during years of less intense pumping. The State of California is currently recovering from drought conditions. As a result, less CVP water is delivered to contractors such as the WWD, and groundwater is therefore more heavily relied upon. If reliance on local groundwater resources continues as anticipated, groundwater surface elevation is anticipated to continue decreasing, until the intensity of use subsides.

Groundwater levels in the Westside Subbasin were generally at their lowest levels in the late 1960s, prior to importation of surface water through the CVP. With importation of surface waters, groundwater levels gradually increased to a maximum in the late 1980s, falling briefly during a severe drought in the late 1970s. Groundwater levels began dropping again during a drought between approximately 1987 and 1992, with water levels showing the effects until 1994. Through a series of wet years after the drought, 1998 water levels recovered to near record high levels. (DWR, 2006a)

As previously noted, WWD encompasses approximately 600,000 acres; of this area, surface water is delivered to farms across approximately 535,000 acres, while approximately 33,000 acres receive no surface water allocations and rely exclusively on groundwater. The proposed Project site receives no surface water allocation from the WWD, and much of the land on the site has been fallowed for the past 10 years, meaning that irrigation is not permitted on the site. In addition, some of the parcels within the Scarlet Solar Energy Project footprint are subject to a nonirrigation covenant as a result of a 2002 settlement agreement between the former landowners, the WWD, and the USBR to settle claims related to drainage services on the parcels. However, overlying groundwater rights to these parcels are applicable, and the applicable landowner(s) are allowed to pump underlying groundwater for uses other than irrigation.

STORAGE CHARACTERISTICS

Storage capacity of the Westside Subbasin has been estimated to be anywhere between approximately 30,500,000 acre-feet and 65,000,000 acre-feet, depending upon assumed thickness of the upper (unconfined) aquifer. It is important to note that "storage capacity" does not reflect the actual amount of groundwater in storage, or the available groundwater supply, but rather is a function of the porosity of subsurface materials and the quantity of water that could theoretically be contained in the subsurface, based on this porosity. Estimated storage capacity of the Upper and Lower Aquifers is summarized below.

- **Upper Aquifer.** The storage capacity of the upper semi-confined aquifer is approximately 36.5 million acre-feet. This estimate is based on an average thickness of 675 feet from the ground surface to the top of the Corcoran Clay, an area of 600,000 acres, and a specific yield of nine percent. Specific yield is the ratio of the volume of water a rock or soil will yield by gravity drainage. (DWR, 2006a)
- **Lower Aquifer**. The storage capacity of the lower confined aquifer is approximately 65 million acre-feet. This estimate is based on an average thickness of 1,200 feet from the base of the Corcoran Clay to the base of fresh groundwater, an area of 600,000 acres, and a specific yield of nine percent. (DWR, 2006a)

As noted, estimates of storage capacity rely on assumptions regarding the thickness of subsurface layers and specific yield (the ratio of the volume of water a subsurface material will yield by gravity drainage). Storage capacity is not an estimate of the quantity of groundwater actually available for use, but rather of the quantity of water that could potentially be stored within a certain area, under maximum capacity conditions.

SAFE YIELD / BUDGET

The "safe yield" of a groundwater basin is the maximum quantity of water that can be continuously withdrawn from a groundwater basin without adverse effect, while groundwater "budget" is an accounting of all inflows to a basin compared to all outflows from the basin. Safe yield is ideally determined by consideration of the groundwater budget; however, often sufficient data is not available to compile a reasonable budget. For instance, private landowners and groundwater users are typically not required to report rates of usage, which need to be accounted for or at least estimated in a groundwater budget. Other factors that a groundwater budget may account for include evapotranspiration, infiltration of precipitation, underflow to/from other groundwater basins, and extractions from private wells, as well as groundwater management and supply reliability efforts such as banking and conservation programs.

In the proposed Project area, the WWD records annual groundwater use rates (by the WWD), but groundwater uses by other sources are not recorded (farmers and residential users located outside the WWD jurisdiction). As noted above, the WWD delivers water to farms across approximately 535,000 acres, while approximately 33,000 acres receive no WWD allocations and rely exclusively on groundwater (the proposed Project site receives no WWD water allocation and much of the site has not been irrigated for more than 10 years). Although existing data may not be sufficient to determine with a high level of accuracy the groundwater budget that may be used to estimate safe yield for the Westside Subbasin, the WWD has maintained detailed records of its annual water usage and has developed estimates of safe yield for the subbasin based on these records.

In order to approximate safe yield of the Westside Subbasin, the WWD has plotted the amount of groundwater pumped (by WWD) in one year against the average change in groundwater level during that year, drawing a "best fit" line among the plotted points, and identifying the intersection of the best fit line with the line showing zero groundwater level change (WWD, 2012). Based on this approach, the WWD has identified 200,000 AFY to be the safe yield of the Westside Subbasin (WWD, 2012). This means that in any given year, approximately 200,000 AFY of water may be pumped from the Westside Subbasin without adverse effect on depth to groundwater, where increasing depth to groundwater indicates overuse/overdraft.

Table 3 indicates that, while the groundwater elevation consistently falls during years of more intense pumping, it also consistently recovers during years of less intense pumping. As noted above, the State of California is currently recovering from drought conditions and as a result, less CVP water is delivered to contractors such as the WWD, and groundwater is therefore more heavily relied upon. If reliance on local groundwater resources continues as anticipated, groundwater surface elevation is anticipated to continue decreasing, until the intensity of use subsides.

WATER QUALITY AND DRAINAGE CONSIDERATIONS

The Westside Subbasin is located within the jurisdiction of the Central Valley RWQCB, and is subject to management direction of the Water Quality Control Plan (Basin Plan) for the Central Valley Region (Region 5). For planning and reporting purposes, Region 5 has two Basin Plans, one for the Tulare Lake Basin and one for the Sacramento River and San Joaquin River Basins; the Westside Subbasin is addressed in the Tulare Lake Basin Plan. Designated beneficial uses of the Westside Subbasin, as identified in the Tulare Lake Basin Plan, include the following:

- **MUN (Municipal and Domestic Supply).** Uses of water for community, military, or individual water supply systems, including but not limited to drinking water supply;
- **AGR (Agricultural Supply).** Uses of water for farming, horticulture, or ranching, including but not limited to irrigation, stock watering, or support of vegetation for range grazing; and

- **IND (Industrial Service Supply).** Uses of water for industrial activities that do not depend primarily on water quality, including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization (CVRWQCB, 2018).

Groundwater in the Project area (and the west side of the San Joaquin Valley in general) tends to be high in TDS concentrations, or salts associated with long-term agricultural uses (described further below). Some areas are also affected by selenium and boron that may affect usability.

The waters of the Upper Aquifer are generally high in calcium and magnesium sulfate. Groundwater below 300 feet and above the Corcoran Clay tends to have decreased TDS concentrations with increased depth. Most groundwater of the Lower Aquifer is of the sodium sulfate type. The difference in quality between the Upper and Lower Aquifers is that the confined zone contains less TDS. Department of Health Services (DHS) data indicates an average TDS of 520 mg/L in the Westside Subbasin, generally ranging between 220 mg/L and 1,300 mg/L. However, TDS in shallow groundwater have also been measured at concentrations greater than 10,000 mg/L at some locations in the lower fan areas. (DWR, 2006a)

Poor subsurface drainage and high soil salinity conditions have limited agricultural production for more than a century. Beginning in the late 1800s, irrigation of crops with water from the San Joaquin and Kings Rivers has led to rising water tables, increased soil salinity, and removal of some land from production. Factors that have contributed to increased soil salts and selenium concentrations in the soil and groundwater include the following.

- Irrigation water percolating past crop roots
- Groundwater pumped from deep wells
- Imported surface water used for irrigation in areas already affected by poor drainage (USBR, 2006)

As a result of the factors above, soil salts and selenium in irrigation water leach from the unsaturated soil zone to increase salt and selenium concentrations in the groundwater. Studies have shown that irrigation had affected the upper 20 to 200 feet of the saturated groundwater zone (Upper Aquifer). This poor quality groundwater zone is moving downward in response to recharge from above the water table and pumping from deep wells, which creates a vertical hydraulic gradient. Studies have shown that eastward movement of saline groundwater affects the quality of water pumped from the semiconfined zone near Mendota and Fresno Slough. (USBR, 2006)

Lands within the WWD have historically been affected by poor drainage, which exacerbates salt accumulation in the soil. The original authorization for WWD included provisions for drainage service, but these facilities were never completed. The problem can be managed in the short-term with intensive irrigation management; WWD is currently using tactics such as this to address drainage issues in the area, such as by ceasing irrigation on the Project site. Salts must ultimately be exported from the area to achieve salt balance and maintain land productivity.

SHALLOW GROUNDWATER

The issue of shallow groundwater caused by poor drainage in the western San Joaquin Valley, including the proposed Project area, was addressed in the San Joaquin Valley Drainage Report of 1990, and included the following recommendations for the WWD area.

1) Deep percolation on 159,300 acres of drainage-affected lands can be reduced to 0.4 acre-feet per acre by improved irrigation management
2) Reuse drainage water to irrigate about 12,100 acres of salt-tolerant trees and halophytes
3) Operate 400 acres of evaporation ponds and about 1,500 acres of solar ponds
4) Pump the semi-confined aquifer under about 19,000 acres of land

5) Retire 33,000 acres of irrigated agricultural lands (WWD, 2012a)

The need for a drainage outlet within the WWD is still a necessity; however, substantial progress has been made towards the reduction of deep percolation. The average deep percolation for irrigated WWD lands during the period 1978 to 2011 was approximately 0.47 acre-feet per acre. Pumping of the semi-confined aquifer has not been an attractive recommendation in managing shallow groundwater due to lack of options for the use of the water. Land retirement has been successful towards managing shallow groundwater because the water allocation on retired lands remains with WWD per signed agreement between the USBR and the WWD. (WWD, 2012a)

The Project may be considered to represent a beneficial use of high-TDS shallow groundwater. Although the proposed Project would not include establishment of salt-tolerant crops for regional drainage reuse efforts described in the Westside Regional Drainage Plan, the use of local groundwater to support Project construction may have a positive effect on alleviating localized drainage issues by removing high-TDS water and applying it on the land in such a way that most of the applied water would evaporate, and would not infiltrate to exacerbate existing salt and selenium issues.

Water Rights and Adjudication

The state of California does not have a singular comprehensive groundwater permit process to regulate the withdrawal of groundwater resources. Groundwater basins may be adjudicated by court decision, wherein a court determines the quantity of groundwater allotted to each landowner with respective rights to the underlying resource. Most groundwater basins in California are not adjudicated, which means that landowners may extract groundwater underlying their property without a permit process for regulation of groundwater use. Groundwater basins that have been adjudicated by court decision, of which there are 22 such basins in California, are subject to management by a court-designated Watermaster.

The Westside Subbasin is not adjudicated, which means that overlying land owners may use the groundwater on an “equal and correlative” basis, such that all property owners above a common aquifer possess a shared right to reasonable use of the aquifer, and a user cannot take unlimited quantities without regard to the needs of other users. Surplus groundwater may be appropriated for use on non-overlying lands, provided such use will not create overdraft conditions; permits are not required for the use of underlying groundwater, but the appropriation of surplus groundwater is subordinate to the correlative rights of overlying users. As noted in Section 1.1, water to meet the Project’s construction water requirements may be obtained from on-site and/or neighboring groundwater wells.

3.1.2 Surface Water

In any given year, the availability of surface water supplies imported from the Sacramento Delta by the CVP is a function of the following:

- Amount of precipitation received in northern California,
- Quantities of water carried over from prior years in reservoirs, and
- Imposition of regulatory operational constraints in the Delta.

The WWD allocates its surface water supplies to more than 534,000 acres of agricultural lands eligible to receive CVP water. In years in which the WWD receives less than its full allocation of CVP water, the amount of groundwater pumped from the Westside Subbasin is inversely proportional to the availability of surface water supplies.

Section 3.1.1 describes under “Safe Yield / Budget” that the WWD has estimated a safe yield for the Westside Subbasin of approximately 200,000 AFY. During some years of low CVP water delivery, the WWD pumps more than the Westside Subbasin’s estimated safe yield of 200,000 AFY. During these

years, the elevation of groundwater in the subbasin falls (i.e. depth to groundwater increases). Table 3 also shows that in years of less intense groundwater use the elevation also rises, suggesting that water supply recovers after years of temporary overdraft.

3.1.3 Other Water Supplies

Water Conservation Program

The WWD implements a Water Conservation Program, detailed in the WWD's Water Management Plan, and developed with the following objectives.

- Increase seasonal application efficiency
- Increase distribution uniformity
- Increase crop yields
- Decrease deep percolation
- Decrease the effects of soil salinity (WWD, 2012a)

The current Water Conservation Program consists of the following elements.

- **Irrigation Guide.** Provides farmers with water requirements for various crops based on actual weather and computer modeling;
- **Water Conservation and Management Handbook (Irrigation Management Handbook)**. Contains specific water management information for Westlands' farming conditions;
- **Workshops and Meetings** with small groups of farmers facilitate a two-way flow of timely water management information;
- **Technical Assistance and Water Conservation Computer Programs** provide farmers with one-on-one interaction on irrigation management issues;
- **Water Meters.** WWD maintains a program for the installation, upgrading, and repair of WWD water meters, required at each WWD delivery and on private wells participating in any of the District's conjunctive use programs;
- **Groundwater Monitoring.** Provides farmers with information on the quality and depth of deep groundwater, enabling them to assess their groundwater development;
- **Shallow Groundwater Monitoring** provides farmers with information on the quality and depth of shallow groundwater on a District-wide basis, giving irrigation managers a low-cost tool with which to develop their water management strategy;
- **Efficiency Testing** is conducted on WWD pumps, which serve as part of the water distribution system, to help prevent potentially catastrophic system downtime and reduce electrical consumption and costs;
- **Conjunctive Use of Surface and Groundwater** improves overall water supply reliability by making more efficient use of water that is available (in wet periods, use of surface water is encouraged to preserve groundwater supplies and in droughts, greater flexibility in the use of groundwater is facilitated to extract the maximum benefit from this resource);
- **Irrigation System Improvement Program**. Lease program offers water users an opportunity to lease/own equipment such as drip, micro-spray, sprinkler, and aluminum pipe to encourage conversion to more efficient means of irrigation; and
- **Satellite Imagery** purchased approximately once every two weeks, from USGS, processed by staff and placed on the District's web page, gives the Districts' farmers visual Distribution Uniformity on each of their fields. (WWD, 2012a)

Tangible results of the water conservation efforts described above have included a relative stabilization of shallow groundwater depths, a substantial increase in the number of pressurized (sprinklers and drip) irrigation systems, and intensified irrigation management through the use of irrigation specialists and science-based technology, and a historic average District-wide seasonal application efficiency of 83 percent (WWD, 2012a).

3.1.4 Groundwater Management

Multiple groundwater management efforts currently exist for resources in the Westside Subbasin, as summarized below. In the absence of a detailed water budget for these subbasins, the management efforts described below are essential to understanding supply conditions and ensuring water supply reliability.

Westlands Water District

The Westside Subbasin is located almost entirely within the WWD service area. The WWD delivers surface waters obtained through the CVP, supplementing this supply with local groundwater supply when necessary. Groundwater management and water conservation efforts undertaken by the WWD are discussed in detail in Section 4.1.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT

In September 2014, California Governor Jerry Brown signed a three-bill package known as the Sustainable Groundwater Management Act (SGMA) into law. SGMA establishes a framework for local groundwater management and requires local agencies to bring overdrafted basins into balanced levels of pumping and recharge.

The California Statewide Groundwater Elevation Model (CASGEM) Priority List ranks groundwater basins across the state with assessment rankings of High, Medium, Low, or Very Low. The Westside Subbasin has been ranked as a High priority basin (DWR, 2018).

SGMA requires the formation of locally-controlled Groundwater Sustainability Agencies (GSAs). GSAs are responsible for developing and implementing Groundwater Sustainability Plans (GSPs) to guide groundwater management decisions and ensure long-term sustainability in their basins. The WWD serves as the GSA for the Westside Subbasin.

Westside Regional Drainage Plan

The Westside Regional Drainage Plan represents a collaborative effort among the following stakeholders to provide drainage relief in the Project area: San Joaquin River Exchange Contractors Water Authority, Panoche Water District, WWD, and Broadview Water District. Key elements of the Plan include the following.

- Adaptive management to perfect the final drainage management strategy
- Land retirement of up to 200,000 acres
- Groundwater management
- Source control
- Regional reuse
- Treatment
- Salt disposal

The Westside Regional Drainage Plan calls for identification of sound and effective projects to manage drainage and an accelerated implementation schedule to comply with impending regulatory constraints (SWRCB, 2003).

LAND RETIREMENT / FALLOWING

Land retirement is a key component of the Westside Regional Drainage Plan. The land is available for other uses such as regional drainage reuse projects, commercial and industrial use, flood control, surface water storage where appropriate, and wildlife habitat. The proposed Project represents an alternative use of retired agricultural land in compliance with the goals and objectives of the Westside Regional Drainage Plan. The land retirement component of the Plan will be to buy land from willing sellers in areas currently impacted by shallow groundwater. The water supply from this land will remain with the WWD so long as appropriate drainage mitigation programs are effectively implemented consistent with the Plan. (SWRCB, 2003)

In 1999, the WWD initiated a process to purchase approximately 14,000 acres of land with shallow groundwater problems and within the area identified by the USBR as needing drainage service. In addition, 1,443 acres have been retired under the USBR's Land Retirement Demonstration Project[3]. As the land was purchased, the water supply that was historically applied to that land was reallocated to the remaining lands in the WWD. The WWD developed an agricultural lease program for these lands, which allows lessees to dry land farm (i.e. no irrigation). (SWRCB, 2003)

REGIONAL DRAINAGE REUSE

Drainage reuse is the application of subsurface drainage water (groundwater), either directly or slightly diluted, to salt-tolerant crops. The purpose of regional drainage reuse is to reduce the volume of the subsurface drainage water for ease in treatment. Lands used for reuse are managed to maintain adequate salt levels in the soil, such as by installing of subsurface drains to maintain adequate leaching fraction. Regional drainage reuse projects are modeled after the San Joaquin River Water Quality Improvement Project (SJRIP). Within the WWD service area, portions of the land purchased under the land retirement program are used to implement regional reuse efforts that utilize water collected by shallow agricultural tile sumps as well as water generated by shallow well pumping to grow salt-tolerant crops. (SWRCB, 2003)

GROUNDWATER MANAGEMENT PILOT PROJECT

In 2002, the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) implemented a pilot project in cooperation with the USBR, to study the feasibility of using groundwater pumping to mitigate drainage issues in the San Joaquin Valley area. The pilot project involved pumping two wells above the Corcoran Clay but below the shallow groundwater; this water contains elevated levels of salt, but not Selenium. As previously described, the Westside Subbasin is comprised of an upper and a lower aquifer, separated by a layer of Corcoran Clay. Under the pilot project, the aforementioned water supply was diverted into a surface canal and put to beneficial use on surrounding lands and refuges. The pilot project also included monitoring of the shallow groundwater levels and discharges of nearby tile sumps to assess how the groundwater basin was responding to pumping. (SWRCB, 2003)

The pilot project demonstrated significant lowering of the crop root zone water levels, a beneficial impact to groundwater drainage and water quality consideration. The pilot project also indicated that expansion of the groundwater management program is a viable component of the long-term drainage plan. Additionally, extensive modeling has demonstrated significant drain water source reduction benefits from groundwater pumping, where "source reduction" refers to the pumping of impaired groundwater to improve overall groundwater quality. The modeling results show that a carefully crafted

[3] The USBR's Land Retirement Demonstration Project included completion of a five-year study at two sites, one located in Tranquillity (near the proposed Project site), and removed land from irrigated agricultural production as a means by which to reduce the accumulation of drain water and study environmental resources, such as species presence and concentrations of salts and contaminants in soil and groundwater (USBR, 2005).

and implemented groundwater management program alone can result in significant source reduction. (SWRCB, 2003)

3.2 City of Fresno

Historically, the City of Fresno's water supply consisted of direct pumping from wells drilled into the underlying groundwater aquifer. In the 1960s, the City of Fresno purchased surface water made available from USBR. The City of Fresno currently relies on a combination of groundwater and surface water supplies to meet water demands within its service area.

Table 4 shows the City of Fresno's historical water production from 1990 to 2015.

Table 4 City of Fresno – Historical Water Production

Calendar Year	Groundwater (AF)	Treated Surface Water (AF)	Total Production (AF)	Percent Groundwater	Percent Surface Water
1990	118,808	-	118,808	100%	0%
1991	117,562	-	117,562	100%	0%
1992	118,303	-	118,303	100%	0%
1993	119,521	-	119,521	100%	0%
1994	128,992	-	128,992	100%	0%
1995	130,389	-	130,389	100%	0%
1996	138,389	-	138,389	100%	0%
1997	148,670	-	148,670	100%	0%
1998	135,546	-	135,546	100%	0%
1999	151,806	-	151,806	100%	0%
2000	156,487	-	156,487	100%	0%
2001	164,049	-	164,049	100%	0%
2002	165,542	-	165,542	100%	0%
2003	165,177	-	165,177	100%	0%
2004	160,047	4,060	164,108	98%	2%
2005	141,471	15,807	157,278	90%	10%
2006	136,050	19,701	155,750	87%	13%
2007	145,148	20,650	165,798	88%	12%
2008	148,006	20,116	168,122	88%	12%
2009	138,254	19,563	157,817	88%	12%
2010	128,578	18,474	147,052	87%	13%
2011	119,813	20,216	140,029	86%	14%
2012	115,615	19,980	135,595	85%	15%
2013	128,510	18,089	146,599	88%	12%
2014	110,313	20,115	130,428	85%	15%
2015	83,360	28,347	111,706	75%	25%

Definitions:
Calendar Year = January 1 – December 31
AF = acre-feet
Source: City of Fresno, 2016

As shown in Table 4, the City of Fresno began transitioning away from total reliance on groundwater supplies in 2004. The following sections characterize the City's historical and projected supplies and demands.

3.2.1 Kings Subbasin, San Joaquin Valley Groundwater Basin

The City of Fresno overlies the Kings Subbasin of the San Joaquin Valley Groundwater Basin. The Kings Subbasin extends across Fresno, Kings, and Tulare Counties. It encompasses a surface area of

approximately 976,000 acres (1,530 square miles) within central California's San Joaquin Valley. The geography and climate of the San Joaquin Valley are characterized in Section 3.1.1. In the Kings Subbasin, average annual precipitation ranges from seven to ten inches, increasing eastward. (DWR, 2006b)

Basin Characteristics

Within the San Joaquin Valley, the Kings Subbasin is bounded by the San Joaquin River on the north, the Delta-Mendota and Westside Subbasins on the west, and the Sierra Nevada foothills on the east. The southern boundary runs easterly along the boundaries of the Empire West Side Irrigation District, the Laguna Irrigation District, the Kings County Water District, the Consolidated and Alta Irrigation Districts, and the Stone Corral Irrigation District.

The San Joaquin and Kings Rivers are the principal rivers within or bordering the Kings Subbasin. In addition, the Fresno Slough and James Bypass connect the Kings River with the San Joaquin River at the western edge of the Subbasin. (DWR, 2006b)

Water-bearing Features

Like the Westside Subbasin, the Kings Subbasin consists of Tertiary- and Quaternary-age unconsolidated continental deposits. A younger series of deposits of Quaternary age, which overlie the older deposits, are comprised of older alluvium, lacustrine and marsh deposits, younger alluvium, and flood-basin deposits. These Quaternary age deposits yield more than 90 percent of the groundwater pumped from wells in the Kings Subbasin.

The older and younger alluvium deposits are described below.

- **Older alluvium.** The upper several hundred feet within the Kings Subbasin generally consists of highly permeable, coarse-grained deposits, which are termed older alluvium. The older alluvium forms an important aquifer in the Kings Subbasin. It consists of intercalated lenses of silt, clay, silty and sandy clay, clayey and silty sand, sand, gravel, cobbles, and boulders. Near the trough of the valley, this alluvium is fine-grained. In the western portion of the Subbasin, the older alluvium is interbedded with lacustrine and marsh deposits.
- **Younger alluvium.** The permeability of the younger alluvium varies across the Subbasin; while highly permeable beneath river channels, it may be of poor permeability under flood plains. The younger alluvium is a sedimentary deposit of fluvial arkosic beds. Along the Fresno Slough and James Bypass, the younger alluvium is interbedded with flood-basin deposits consisting of sand, silt, and clay.

The Corcoran Clay (E-clay) member of the Tulare Formation occupies the western one-quarter to one-third of the Kings Subbasin. The A-clay and C-clay layers that lie above the Corcoran clay cause confined groundwater conditions beneath them. (DWR, 2006b)

Recharge and Connectivity

Recharge to the Kings Subbasin occurs from river and stream seepage, deep percolation of irrigation water, canal seepage, and intentional groundwater recharge. Between 1964 and 2004, the long-term average deep percolation from rainfall and irrigation water was found to be 42,700 AFY. The average net subsurface flow was characterized as being 64,800 AFY. (City of Fresno, 2016)

The Cities of Fresno and Clovis, Fresno Irrigation District, Fresno Metropolitan Flood Control District, Consolidated Irrigation District, and others contribute to groundwater recharge efforts in the Subbasin (DWR, 2006b). Between 2000 and 2013, the City of Fresno has recharged approximately 50,000 AFY. In 2014, the City of Fresno's Metropolitan Water Resources Management Plan outlined developing additional intentional recharge activities to attain a total of 75,100 AFY. (City of Fresno, 2016)

GROUNDWATER LEVEL TRENDS

For many years, the City of Fresno relied entirely on the Kings Subbasin to meet its water supply needs. After World War II, the population of the City of Fresno grew rapidly and groundwater production increased. Between 1959 and 1968, groundwater levels declined at a rate of 2.8 feet per year. A cone of depression formed beneath the City of Fresno. Groundwater levels continue to decline in the Subbasin, but at a slower rate than before. Since 1990, groundwater levels have been declining at the following rates: less than 0.5 feet per year in the southwest portion of the downtown area, 1.5 feet per year in the northern and southern areas of the City, and three feet per year in the northeastern area of the City.

Today, groundwater remains the City of Fresno's primary water supply source. However, in recent years the City of Fresno has incorporated conjunctive use and surface water treatment into its water supply portfolio in order to maintain the sustainability of the Kings Subbasin. Groundwater replenishment efforts and introduction of alternative supply sources have not yet been sufficient to offset the effect of groundwater extraction. (City of Fresno, 2016)

STORAGE CHARACTERISTICS

Storage capacity of the Kings Subbasin has been estimated at 93 million acre-feet, to a depth of 1,000 feet or less. (DWR, 2006b)

In 2007, the City of Fresno contributed funding to the preparation of a hydrological groundwater and surface water model for the Upper Kings Basin Integrated Regional Water Management Authority, called the Kings Basin Integrated Groundwater and Surface Water Model (Kings Basin Water Authority [KBWA], 2007). The City of Fresno relied on this model to develop its 2015 UWMP groundwater projections and estimates.

SAFE YIELD / BUDGET

The City of Fresno's 2015 UWMP identified the components to groundwater yield in normal precipitation years, including subsurface inflow and safe yield. In 2015, the UWMP estimated natural recharge to be 25,400 acre-feet, net subsurface inflow to be 47,100 acre-feet, safe yield to be 72,500 acre-feet, and intentional recharge to be 53,100 acre-feet. Total estimated groundwater yield for 2015 was calculated to be 125,600 acre-feet. (City of Fresno, 2016)

WATER QUALITY AND DRAINAGE CONSIDERATIONS

Groundwater in the Kings Subbasin generally meets the primary and secondary drinking water standards for municipal water use. The groundwater is predominantly of bicarbonate type, with calcium, magnesium, and sodium as the dominant ions. In the western portion of the Kings Subbasin, some chloride waters have been found (DWR, 2006b).

Total dissolved solids (TDS) concentrations typically range from 200 to 700 mg/L. At greater depths, however, groundwater with TDS concentrations of 2,000 mg/L has been encountered. (City of Fresno, 2016)

The Kings Subbasin is threatened by chemical contaminants including 1, 2-Dibromo-3-Chloropropane (DBCP), ethylene dibromide (EDB), trichloropropane (TCP), other volatile organic compounds (VOCs) such as trichloroethylene (TCE) and tetrachloroethylene (PCE), methyl tertiary butyl ether (MTBE), nitrate, manganese, radon, chloride, and iron. (City of Fresno, 2016)

Like the Westside Subbasin, the Kings Subbasin, is located within the jurisdiction of the Central Valley RWQCB, and is subject to management direction of the Basin Plan for the Central Valley Region (Region 5). The Kings Subbasin is addressed in the Tulare Lake Basin Plan. Designated beneficial uses of the Kings Subbasin, as identified in the Tulare Lake Basin Plan, include the following:

- **MUN (Municipal and Domestic Supply).** Uses of water for community, military, or individual water supply systems, including but not limited to drinking water supply;
- **AGR (Agricultural Supply).** Uses of water for farming, horticulture, or ranching, including but not limited to irrigation, stock watering, or support of vegetation for range grazing; and
- **IND (Industrial Service Supply).** Uses of water for industrial activities that do not depend primarily on water quality, including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
- **PRO (Industrial Process Supply).** Uses of water for industrial activities that depend primarily on water quality.
- **REC-1 (Water Contact Recreation).** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
- **REC-2 (Non-Contact Water Recreation).** Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities. (CVRWQCB, 2018)

The groundwater quality of the Kings Subbasin is generally suitable for the current beneficial uses (KBWA, 2007b).

Water Rights and Adjudication

The Kings Subbasin is not adjudicated, which means that overlying land owners may use the groundwater on an “equal and correlative” basis, such that all property owners above a common aquifer possess a shared right to reasonable use of the aquifer, and a user cannot take unlimited quantities without regard to the needs of other users.

3.2.2 Surface Water

The City of Fresno receives surface water supplies from the USBR via CVP San Joaquin River Class I supplies and the Fresno Irrigation District (FID) via Kings River Class II supplies.

Fresno Irrigation District

The FID is one of 28 agencies that receive an entitlement of water from the Kings River through the Kings River Water Association. In 1976, the City of Fresno and FID executed an agreement stipulating that, as land is annexed to the City of Fresno, the City will receive a pro rata share of FID’s Kings River entitlement. The City of Fresno’s 2015 UWMP projects the annual allocation of FID’s Kings River water through 2040 (City of Fresno, 2016). These projections are incorporated into the overall supply projections discussed in Section 4.

United States Bureau of Reclamation

In 1961, the City of Fresno executed an agreement with USBR for 60,000 AFY of Class I water from the CVP – Friant Division on the San Joaquin River. USBR CVP – Friant Division facilities include Friant Dam, Friant-Kern Canal, and the Madera Canal.

Additionally, the City of Fresno's contract with USBR allows for the provision of other water acquisition opportunities. These include Recovered Water Account water, Section 215 water, unreleased restoration flows, unreleased recirculation flows, and uncontrolled season flows. (City of Fresno, 2016)

3.2.3 Other Water Supplies

Recycled Water

The City of Fresno diverts a portion of its undisinfected secondary effluent from the Fresno/Clovis Wastewater Reclamation Facility to irrigate non-food crops grown adjacent to the facility. In addition, the North Fresno Water Facility produces disinfected tertiary effluent, which is conveyed to an adjacent golf course for irrigation purposes.

Table 5 provides the City of Fresno's annual recycled water use between 2010 and 2015.

Table 5 City of Fresno Recycled Water Use

	Quantity (AFY)					
Recycled Water Facility	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
NFWRF	25	57	58	46	0	62
RWRF	9,591	10,072	8,655	9,406	10,245	8,688
Total	**9,616**	**10,129**	**8,713**	**9,452**	**10,245**	**8,750**

AFY = acre-feet per year

Source: City of Fresno, 2016

3.2.4 Groundwater Management

Multiple groundwater management efforts currently exist for resources in the Kings Subbasin, as summarized below. Regional groundwater management efforts may apply to multiple groundwater subbasins.

Fresno County Groundwater Management Plan

The Fresno County Groundwater Management Plan was adopted in 1997 and defines a strategy to enhance and maintain the quantity and quality of groundwater resources throughout the county. The plan states that the County's groundwater-related issues can be addressed through currently available means without intrusive regulation or restrictions on groundwater pumping. If implemented, efforts related to conservation, water recycling, groundwater banking, management of groundwater contamination, and development of additional surface water storage can provide means to meet future increases in demand while reducing or eliminating overdraft conditions in the County. These and other initiatives contained in the County's Groundwater Management Plan include the following:

- **Groundwater Banking** would involve the use of unused storage capacity in local aquifers, which could be used for the intentional recharge of excess flood flows which are currently released and leave the County;
- **First Refusal.** As a CVP contractor, the County intends to explore the feasibility of developing a program to exercise its right of first refusal for purchase of CVP water proposed for transfer, and to acquire other water should additional supplies become available;

- **Groundwater Export**. The County may implement an ordinance prohibiting groundwater for export outside the County, and prohibiting uncontrolled groundwater pumping to replace surface water leaving the County as a result of a transfer;
- **Groundwater Monitoring**. The County intends to develop a program to monitor groundwater quantity and quality to provide an early warning of potential future groundwater-related problems, and to implement programs and policies directed toward the maintenance and enhancement of water quality, preventing groundwater contamination, and preventing the spread of groundwater contamination;
- **Groundwater Recharge**. The County intends to implement a groundwater recharge ordinance to acquire unused surface waters formerly used on converted agricultural lands and use those waters for recharge, and to construct recharge facilities to implement this provision;
- **Groundwater Protection Area**. The County may explore the feasibility of establishing groundwater protection areas, whereby areas of good recharge capability, shallow groundwater, or existing groundwater contamination would be designated for protection. (Fresno County, 2000)

Fresno/Clovis Metropolitan Area Water Resources Management Plan

The Fresno/Clovis Metropolitan Area Water Resources Management Plan is a joint document adopted by the cities of Fresno and Clovis in 1993. The primary goal of the plan is to provide a safe, dependable, reliable and economical water supply that will accommodate existing and future development in the two cities until the year 2050. To achieve this goal, the plan includes policies encouraging the following:

- Use of groundwater as the primary water source,
- Providing wellhead treatment to ensure that domestic supply meets safe drinking water standards,
- Supplementing the groundwater supply with surface water,
- Constructing plants to treat surface water and large-diameter transmission water mains,
- Continuing with an active recharge program, and
- Continuing with appropriate water conservation measures. (Fresno County, 2000)

Implementation of this area-wide Plan demonstrates active effort towards water supply reliability on a regional scale.

Sustainable Groundwater Management Act

The Kings Subbasin has been ranked as a High priority basin under SGMA (DWR, 2018). In response to SGMA, seven agencies have formed in the Kings Subbasin to develop and implement GSPs for the long-term sustainability of local groundwater supplies. The City of Fresno and the Project site are located in the jurisdiction of the North Kings GSA.

The North Kings GSA is a joint powers agency (JPA) formed in December 2016. Local public agencies to adopt the JPA include the FID, Garfield Water District, International Water District, Biola Community Services District, City of Kerman, City of Clovis, City of Fresno, and County of Fresno. In addition, the Bakman Water Company and Fresno Metropolitan Flood Control District have been accepted to the JPA through a separate binding agreement.

The North Kings GSA, consistent with SGMA, is developing a GSP targeted for completion before the legislated deadline of January 31, 2020. In addition to the North Kings GSA, up to six additional Groundwater Sustainability Plans are anticipated to be developed in the Kings Subbasin by the following GSAs: Central Kings GSA, James Irrigation District GSA, Kings River East GSA, McMullin Area GSA, North Fork Kings GSA, and South Kings GSA. (North Kings GSA, 2018)

3.3 City of Mendota

The City of Mendota, located approximately nine miles north of the project site, is another potential source of operational water for the proposed Project. The City of Mendota's water supply system consists of three primary production wells (Nos. 7, 8, and 9), two emergency backup wells (Nos. 3 and 5), transmission mains, and a water treatment plant. The City's primary well field is located on private property situated approximately 3.5 miles northeast of the City of Mendota, near the San Joaquin River. (City of Mendota, 2009)

3.3.1 Delta-Mendota Subbasin, San Joaquin Valley Groundwater Basin

The City of Mendota's well field overlies the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin. The Delta-Mendota Subbasin extends across Stanislaus, Merced, Madera, and Fresno Counties. It encompasses approximately 747,000 acres (1,170 square miles) in the San Joaquin Valley. Average annual precipitation in the Delta-Mendota Subbasin area is nine to 11 inches (DWR, 2006c). The geography and climate of the San Joaquin Valley are characterized in Section 3.1.1.

Basin Characteristics

The Delta-Mendota Subbasin is bounded on the west by the Coast Ranges, and on the north by the Stanislaus/San Joaquin County line. The eastern boundary primarily follows the San Joaquin River then follows the Chowchilla Bypass and the eastern border of Farmer's Water District. Heading northward, it follows the eastern, northern, and northwestern boundary of the Westside Subbasin (corresponding with WWD boundaries). (DWR, 2006c)

WATER-BEARING FEATURES

Groundwater in the Delta-Mendota Subbasin occurs in three water-bearing zones. The lower zone contains fresh water in the lower section of the Tulare Formation. The upper zone contains confined, semi-confined, and unconfined water in the upper section of the Tulare Formation and upper deposits. Lastly, the shallow zone contains unconfined water within approximately 25 feet of the land surface. (DWR, 2006c)

The Delta-Mendota Subbasin's groundwater reservoir consists of the Tulare Formation, terrace deposits, alluvium, and flood-basin deposits. The Tulare Formation is composed of beds, lenses, and tongues of clay, sand, and gravel. These layers have been alternatively deposited in oxidizing and reducing environments. The Corcoran Clay member of the Tulare Formation acts as a confining layer. It underlies the Delta-Mendota Subbasin at depths ranging from 100 to 500 feet. (DWR, 2006b)

Alluvium deposits are composed of interbedded, poorly to well-sorted clay, silt, sand, and gravel. Alluvium is divided based on its degree of dissection and soil formation. The flood-basin deposits in the Delta-Mendota Subbasin are primarily composed of light-to-dark brown and gray clay, silt, sand, and organic materials with locally high concentrations of salts and alkali. (DWR, 2006c)

The water table generally lies below the bottom of the terrace deposits of Pleistocene age, which lie up to several feet higher than present streambeds. These deposits are composed of yellow, tan, and light-to-dark brown silt, sand, and gravel with a matrix that varies from sand to clay. (DWR, 2006)

RECHARGE AND CONNECTIVITY

The California DWR estimates natural recharge in the Delta-Mendota Subbasin to be 8,000 AFY. Applied water recharge is estimated around 74,000 AFY. Groundwater elevation maps in the region suggest that groundwater barriers do not exist in the Subbasin. (DWR, 2006c)

The Delta-Mendota Subbasin is recharged via percolation from applied irrigation water, canals, and water storage facilities. Some recharge also occurs from seepage losses along the San Joaquin River and infiltration of runoff from the Coast Ranges into tributary streams. (Central Valley Regional Water Quality Control Board [RWQCB], 2015)

Groundwater Level Trends

According to USGS well records, the water surface elevation underneath the City of Mendota was approximately 75 feet in the 1980s (USGS, 2018). During the 1990s, pumping from the City of Mendota wells ranged from 1,200 to 1,460 AFY. This pumping quantity was relatively small compared to other producers in the region, including the Central California Irrigation District (CCID) and the Mendota Pool Pumpers. Between 1991 and 1997, CCID pumped a maximum of 6,966 AFY, and the Mendota Pool Pumpers pumped as much as 31,672 AFY.

Across the Delta-Mendota Subbasin, groundwater levels increased an average of 2.2 feet from 1970 to 2000. According to DWR data, the period from 1970 through 1985 showed a general increase. Between 1985 and 1994, groundwater levels declined back to the 1970 groundwater level. Groundwater levels rose to about 2.2 feet above the 1970 groundwater level in 1995, and fluctuated around this value until 2000. (DWR, 2006c)

In recent years, DWR well records indicate that the water surface elevation in the vicinity of the City of Mendota's well field has ranged from approximately 100 feet to 130 feet. Between 2015 and 2018, the water surface elevation has been steadily increasing. (DWR, 2018)

Storage Characteristics

Storage capacity of the Delta-Mendota Subbasin is estimated to be approximately 30 million acre-feet to a depth of 300 feet and 82 million acre-feet to the base of fresh groundwater. These same DWR calculations give an estimate of approximately 26 million acre-feet of groundwater to a depth of 300 feet stored in the Subbasin as of 1995. (DWR, 2006c)

Safe Yield / Budget

The safe yield of the Delta-Mendota Subbasin has not been characterized. However, the City of Mendota regularly monitors groundwater pumping activities from their wellfield, and monitors any groundwater use for activities such as but not limited to the proposed Project. Should the City of Mendota provide water supply for Project operations, such water would be obtained from a metered well on the City's well field site, and trucked to the Project site.

Water Quality and Drainage Considerations

Groundwater in the Delta-Mendota Subbasin is characterized by mixed sulfate to bicarbonate types in the northern and central portion with areas of sodium chloride and sodium sulfate waters in the central and southern portion. TDS values typically range from 700 to 1,000 mg/L in groundwater wells. Shallow, saline groundwater occurs within about 10 feet of the ground surface in most of the Subbasin. There are also localized areas of high iron, fluoride, nitrate, and boron. (DWR, 2006c)

Like the Westside Subbasin and the Kings Subbasin, the Delta-Mendota is located within the jurisdiction of the Central Valley RWQCB, and is subject to management direction of the Basin Plan for the Central Valley Region (Region 5). The Kings Subbasin is addressed in the Tulare Lake Basin Plan. Designated beneficial uses of the Delta-Mendota Subbasin, as identified in the Tulare Lake Basin Plan, include the following:

- **MUN (Municipal and Domestic Supply).** Uses of water for community, military, or individual water supply systems, including but not limited to drinking water supply;
- **AGR (Agricultural Supply).** Uses of water for farming, horticulture, or ranching, including but not limited to irrigation, stock watering, or support of vegetation for range grazing; and
- **IND (Industrial Service Supply).** Uses of water for industrial activities that do not depend primarily on water quality, including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
- **PRO (Industrial Process Supply).** Uses of water for industrial activities that depend primarily on water quality.
- **REC-2 (Non-Contact Water Recreation).** Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- **WILD (Wildlife Habitat).** Uses of water that support terrestrial or wetland ecosystems, including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources. (CVRWQCB, 2018)

Water Rights and Adjudication

The Delta-Mendota Subbasin is not adjudicated, which means that overlying land owners may use the groundwater on an "equal and correlative" basis, such that all property owners above a common aquifer possess a shared right to reasonable use of the aquifer, and a user cannot take unlimited quantities without regard to the needs of other users.

3.3.2 Groundwater Management

Multiple groundwater management efforts currently exist for resources in the Delta-Mendota Subbasin. The Fresno County Groundwater Management Plan, which is described in detail in Section 3.2.4, applies to the Delta-Mendota Subbasin.

Sustainable Groundwater Management Act

The Delta-Mendota Subbasin has been ranked as a High priority basin under SGMA (DWR, 2018). Twenty-four locally-formed GSAs have been established in the Delta-Mendota Subbasin. In 2017, the City of Mendota adopted a resolution establishing the City of Mendota GSA.

These GSAs are responsible for complying with the requirements of the SGMA, including preparing and implementing GSPs, conducting outreach about SGMA, and maintaining local control over the region's groundwater resources. Six coordinated GSPs are currently being developed for the Delta-Mendota Subbasin. These GSPs must be finalized and provided to the State no later than January 31, 2020. (Delta-Mendota SGMA, 2018)

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4 Water Supply Reliability

SB 610 requires the consideration of groundwater supply availability under varying climatic conditions, including normal-year, single-dry-year, and multiple-dry-year scenarios. Characterizations of the water supplies available to the proposed Project provided in the preceding sections further allow for reasonable assumptions to be made regarding water supply availability conditions under varying climatic scenarios.

4.1 Westlands Water District

The WWD delivers federal CVP water to primarily agricultural customers throughout the District area. Although most WWD customers are agricultural users, some are also municipal and industrial; all water delivered is non-potable (as described in Section 3.1, the WWD does not provide piped water to the public for human consumption). For instance, untreated, non-potable water is delivered to the Lemoore Naval Air Station and various rural commercial and residential customers within the District boundaries, as well as to the Cities of Huron and Coalinga, which have separate water supply contracts with the USBR (WWD, 2012a). The proposed Project would also represent a non-agricultural water use. In approximately 2002, the WWD Board of Directors determined that no new non-agricultural service connections would be served if average annual water use for the proposed connection is more than five AFY (CEC, 2007). However, the WWD Board of Directors may adopt a resolution on the use of non-agricultural water. Any use of WWD-provided water by the proposed Project would occur with approval of the WWD Board of Directors and in full compliance with WWD rules and conditions.

The highest level of annual non-agricultural water deliveries by WWD has been approximately 6,500 AFY, which is greater than the proposed Project's anticipated construction water requirement of up to 360 AFY. The CVP allocation to WWD is shared between agricultural, incidental agricultural, and incidental non-agricultural water users, any of which may receive reduced allocations during drought years when the WWD's overall share of CVP water is reduced. There have been no mandatory reductions imposed on WWD's non-agricultural water customers; however, water conservation measures implemented by WWD may result in reduced deliveries. Alternatively, the WWD may purchase water from other sources including an Emergency Drought Water Bank during years of severe drought. (WWD, 2012a)

It is reasonably assumed that the WWD would not use or distribute their allocated surface water supplies or available groundwater supplies in such a way that would be unsustainable to long-term water supply reliability, based on existing management programs. The ongoing efforts of WWD to implement water conservation measures and actively manage shallow groundwater drainage issues which are detrimental to area-wide groundwater quality demonstrate the District's commitment to ensuring sufficient water supply for the area. During years of drought, including single-dry and multiple-dry-year conditions, it is anticipated that the WWD will receive less surface waters from the CVP and therefore rely more on local groundwater resources, resulting in temporary draw-down of the local aquifer(s). As noted above, groundwater monitoring data presented in this WSA indicates that groundwater levels recover after periods of heavier groundwater use, which suggests that any potential overdraft conditions introduced as a result of heavier groundwater use are temporary in nature.

At the end of December 2013, WWD water users had remaining supplies of approximately 206,000 acre-feet; WWD also had approximately 220,000 acre-feet of water in San Luis Reservoir in March of 2014 (WWD, 2014). Particularly in drought years such as the present, this availability of excess surface supplies indicates the success of ongoing water conservation and drought management programs in the area.

Therefore, the WWD is considered an adequate water source for Project construction and/or operation, and the Project's water requirements would not result in an adverse effect on regional water supplies.

4.1.1 Westside Subbasin

During drought years, the WWD relies more heavily on local groundwater resources in the Westside Subbasin. During the 1987-1994 drought, the WWD received an average supply of 61 percent of contract entitlement, and during 1991 and 1992 allocations of only 25 percent were received. Year-to-year surface water allocations and ground water pumping varied significantly between 1976 and 2006, during which period groundwater pumping ranged from a low of 15,000 AFY to a high of 600,000 AFY. In response to these varied pumping rates, groundwater levels show maximum annual variations of declines up to 97 feet per year and maximum recovery levels of up to 89 feet per year.

As discussed in this WSA, groundwater elevation in the Westside Subbasin tends to decrease (depth to groundwater increases) during years of heavier pumping and increase (depth to groundwater decreases) during years of lighter pumping. This indicates that the amount of groundwater available in storage is directly related to the amount of groundwater pumped, which varies depending upon the amount of precipitation received in a given year and subsequently the amount of CVP water delivered to the Project area. As previously noted, groundwater levels in the Westside Subbasin tend to recover after periods of heavier use, indicating supply reliability in the subbasin.

Safe yield for the Westside Subbasin has been estimated by the WWD to be approximately 200,000 AFY. The proposed Project's construction water requirements of up to 360 AFY represent a small portion of this safe yield amount, and would be a short-term temporary use. The Project's operational water requirements of less than 20 AFY would be long-term, lasting for the lifetime of the Project, but represent a very small percentage (0.01 percent) of the safe yield. In addition, the pumping of high-TDS groundwater from the Upper Aquifer could potentially have a positive effect on localized drainage conditions, by relieving the subsurface of elevated groundwater. Therefore, the Westside Subbasin is considered an adequate water source for Project construction and/or operation.

4.2 City of Fresno

In average water year conditions, the City of Fresno considers its water supplies to be fairly stable. The combined surface water supplies from FID and the USBR are sufficient to meet operational needs in the service area. Surface water supplies are the most susceptible to seasonal hydrologic variability. As the availability of surface supplies varies due to climatic conditions, the City of Fresno can meet demands via groundwater resources. (City of Fresno, 2016)

Table 6 shows the City of Fresno's groundwater projections from 2015 through 2040.

Table 6 City of Fresno Groundwater Projections

	Quantity (AFY)					
Groundwater Component	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Natural Recharge	25,400	25,700	25,900	26,000	26,100	26,200
Net Subsurface Inflow	47,100	48,900	50,700	52,600	54,400	56,200
Safe Yield	72,500	74,600	76,600	78,600	80,500	82,400
Intentional Recharge	53,100	55,800	58,500	61,100	63,800	66,500
Total Estimated Groundwater Yield	**125,600**	**130,400**	**135,100**	**139,700**	**144,300**	**148,900**

Groundwater Component	Quantity (AFY) 2015	2020	2025	2030	2035	2040

AFY = acre-feet per year

Source: City of Fresno, 2016

Table 6 indicates that safe yield is expected to increase between 2015 and 2040 as net subsurface inflow and intentional recharge efforts increase recharge in the Kings Subbasin.

With continued intentional recharge augmentation, groundwater supplies remain reliable in all hydrologic conditions. Table 7 shows the City of Fresno's projected water supply and demand in normal, single-dry, and multiple-dry water years from 2020 to 2040.

Table 7 City of Fresno – Projected Supply and Demand Comparison (AF)

		2020	2025	2030	2035	2040
Normal Water Year						
Supply Totals		308,700	329,900	342,00	354,100	366,200
Demand Totals		235,700	264,000	274,100	292,900	301,100
Difference		73,000	65,900	67,900	61,200	65,100
Single-Dry Water Year						
Supply Totals		198,000	216,400	225,800	235,200	244,500
Demand Totals		179,900	205,400	212,900	229,100	234,500
Difference		18,100	11,000	12,900	6,100	10,000
Multiple-Dry Water Year						
	Supply Totals	260,900	280,900	291,800	302,700	313,600
First Year	Demand Totals	213,800	217,800	229,300	229,100	234,500
	Difference	**47,100**	**63,100**	**62,500**	**73,600**	**79,100**
	Supply Totals	271,500	291,700	302,800	313,900	325,000
Second Year	Demand Totals	225,100	229,200	240,900	231,800	241,400
	Difference	**46,400**	**62,500**	**61,900**	**82,100**	**83,600**
	Supply Totals	219,200	238,600	249,000	259,400	269,700
Third Year	Demand Totals	179,900	205,400	212,900	229,100	234,500
	Difference	**39,300**	**33,200**	**36,100**	**30,300**	**35,200**
	Supply Totals	198,000	216,400	225,800	235,200	244,500
Fourth Year	Demand Totals	179,900	205,400	212,900	229,100	234,500
	Difference	**18,100**	**11,000**	**12,900**	**6,100**	**10,000**

Reported volumes are rounded to the nearest 100.

Source: City of Fresno, 2016

As shown in Table 7, the City of Fresno has sufficient water supplies to meet its projected demands in normal and dry water year conditions. In any given year, the Project's operational water demand of 20 AFY is less than the forecasted supply surplus. In the years with the smallest projected supply surpluses (6,100 acre-feet in 2035 single-dry water year and fourth year multiple-dry water year conditions), the operational water demand of the Project accounts for 0.3 percent of the projected surplus.

In addition, the City of Fresno is currently constructing additional infrastructure to maximize its use of regional supplies. A new 54 million gallon per day (mgd) surface water treatment facility is slated for completion in FY 2018, which the City intends to use for potable reuse and groundwater recharge programs. The City of Fresno is also expanding its tertiary wastewater treatment facilities in order to expand recycled water use. (City of Fresno, 2016)

As the City of Fresno brings additional water supply infrastructure online, the reliability of the supply portfolio will become more robust. Additionally, it is reasonably assumed that the City of Fresno would not use or distribute its allocated imported water or natural water supplies in such a way that would be unsustainable to long-term water supply reliability. Therefore, the City of Fresno is considered an adequate water source for project operation, and the Project's water requirements would not result in an adverse effect on regional water supplies.

4.3 City of Mendota

As described in this WSA, the City of Medota does not have an UWMP in place which anticipates water supply availability over a multi-year planning projection. However, any water obtained for the Project from the City of Medota would be pumped from a metered well under the supervision of City staff. It is anticipated that should adverse effects of Project-related groundwater pumping become apparent at a City of Mendota well, City staff would cease such pumping activities and Project operational water would be obtained from an alternate source. Further, as discussed in Section 3.3 of this WSA, DWR groundwater well records indicate that the water surface elevation in the vicinity of the City of Mendota's well field has ranged from approximately 100 feet to 130 feet, and has been steadily increasing between 2015 and 2018 (DWR, 2018); this indicates that the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin is not in overdraft conditions.

5 Conclusions

This WSA assesses the water needs of the proposed Scarlet Solar Energy Project. Available data and information for water supply availability in the project area have been considered in characterizing long-term water availability for the Project. Construction water demands would be met via an existing groundwater well located on the neighboring Tranquillity Solar Generating Station (Tranquillity Station) site. Both the Project site and the Tranquillity Station groundwater well are located within the Westlands Water District and overlie the Westside Subbasin of the San Joaquin Valley Groundwater Basin. Operational water demands would be sourced from either the City of Fresno or the City of Mendota.

Available data and information for water supply availability in the Project area has been considered in characterizing long-term water availability for the Project. The Project's temporary construction demand of up to 360 AFY would be short-term. Construction demands would either be met using groundwater supplies, which are understood to recover from short-term periods of heavier pumping, or WWD-provided water, which is managed by the WWD for long-term supply reliability. In either case, the WWD would assess and approve the use of this water. In neither case is Project construction-related water use expected to result in adverse effects on water supply reliability.

Groundwater overdraft may develop in the Westside Subbasin during implementation of the proposed Scarlet Solar Energy Project. However, such conditions may occur regardless of the proposed Project. In addition, as discussed throughout this WSA, water levels in the Westside Subbasin have historically recovered from periods of heavy pumping (drought years), indicating that overdraft conditions do not persist when the import of surface water returns to non-drought quantities. Groundwater management efforts described in this WSA would contribute to additional supply and improved quality of waters in the Westside Subbasin, and could avoid potential adverse effects associated with future uses.

As described in Section 4, pumping of the semi-confined aquifer (Upper Aquifer) to manage shallow groundwater issues has not been an attractive option to the WWD due to lack of options for the use of the water; however, the proposed Project would introduce a non-irrigation use for this water that may represent an attractive management technique for improving the quality of shallow groundwater. In this manner, the Project may contribute to the regional drainage reuse goals of the Westside Regional Drainage Plan, potentially helping to alleviate groundwater drainage and salt concentrations in the Westside Subbasin over the lifetime of the project.

During operation of the Project, the long-term water demand of approximately 20 AFY would be met using water provided by either the City of Fresno or the City of Mendota. Based on the information provided in this WSA, the operational demand of 20 AFY is not expected to result in adverse water supply reliability impacts to the water sources utilized by these municipalities.

In conclusion, sufficient water supply is available in the Project area to meet Project construction and operational requirements under varying climatic (drought) conditions. This WSA has been prepared in compliance with California Water Code, as amended by SB 610. Attachment A provides a detailed description of the steps followed to prepare this WSA.