Hernandez, Veronica

From: Zerda, Daniel <DZerda@Rivco.org>
Sent: Tuesday, June 8, 2021 10:12 AM
To: Hernandez, Veronica
Subject: [External] CITY OF RIVERSIDE - NOTICE OF AVAILABILITY OF DRAFT EIR - SYCAMORE HILLS DISTRIBUTION CENTER (ALUC Comments)

Hi Veronica,
Thank you for sending the transmittal for the above referenced case. The project is located in Zone C1 of the March Airport Influence Area. It is my understanding that the project does not propose any legislative actions, and since the City's General Plan has been found consistent with the March Airport Land Use Compatibility Plan, City Staff may perform the Airport Compatibility review. Please let me know if you have any questions.

-Best Regards,

Daniel Zerda
Student Intern
Transportation and Land Management Agency
County of Riverside
(951)955-0982

Veronica Hernandez
City of Riverside
vhernandez@riversideca.gov

Subject: **SYCAMORE HILLS DISTRIBUTION CENTER**

DCF: **1027-21NC**

The Transmission Department of SoCalGas does not operate any facilities within your proposed improvement. However, the Distribution Department of SoCalGas may maintain and operate facilities within your project scope.

To assure no conflict with the Distribution's pipeline system, please e-mail them at:

SCGSERegionRedlandsUtilityRequest@semprautilities.com

Best Regards,

SoCalGas Transmission Technical Services
SoCalGasTransmissionUtilityRequest@semprautilities.com

Hernandez, Veronica

From: Jamie Nord <Jamie.Nord@sanmanuel-nsn.gov>
Sent: Tuesday, June 8, 2021 4:51 PM
To: Hernandez, Veronica
Cc: Ryan Nordness
Subject: [External] RE: Response to Draft EIR, Sycamore Hills Distribution Center, Riverside, Riverside County, California

Dear Veronica Hernandez,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above-referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by the Cultural Resources Management Department on June 7th, 2021. The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting to receive consulting party status with the lead agency or to participate in the scoping, development, or review of documents created pursuant to legal and regulatory mandates.

Kind regards,

Jamie Nord
CULTURAL RESOURCES TECHNICIAN
Email: Jamie.Nord@SanManuel-NSN.Gov
O: (909) 864-8933 x50-3421
M: (909) 649-1186
26569 Community Center Dr Highland California 92346

Hernandez, Veronica

From:	Mauricio Alvarez <malvarez@riversidetransit.com>
Sent:	Wednesday, July 14, 2021 10:32 AM
To:	Hernandez, Veronica
Subject:	RE: [External] RE: CITY OF RIVERSIDE - NOTICE OF AVAILABILITY OF DRAFT EIR - SYCAMORE HILLS DISTRIBUTION CENTER

Good Morning Veronica,

When I last received the plans for this project last year, the recommendation was, if possible, to provide an ADA compliant bus stop on Alessandro, west of Vista Grande Dr. I don't know if the recommendation was moved forward at the time. Looking at the plans again, the recommendation would still be the same now. In addition, there should be an ADA pathway from the main entrance/street on Alessandro to the warehouse facility to ensure pedestrians have a safe area to walk.

Thank you for considering this comment.

Mauricio Alvarez, MBA
Planning Analyst
Riverside Transit Agency
p: 951.565.5260 | e: malvarez@riversidetransit.com
Website | Facebook | Twitter | Instagram
1825 Third Street, Riverside, CA 92507

Space, Cover Your Face.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

July 15, 2021 **Via Electronic Mail**

Veronica Hernandez, Senior Planner
City of Riverside
Community and Economic Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, California 92522

Dear Ms. Hernandez:

Notice of Availability of a Draft
Environmental Impact Report for the Sycamore Hills Distribution Center Project

The Metropolitan Water District of Southern California (Metropolitan) reviewed the Notice of Availability of the Draft Environmental Impact Report (DEIR) for the Sycamore Hills Distribution Center (Project). The proposed Project would construct two warehouse buildings, a trailhead parking lot, associated improvements including parking, fire lanes, fencing and walls, landscaping, and water quality treatment areas, and would extend Barton Street to access the Project in the city of Riverside. This letter contains Metropolitan's comments to the proposed Project and DEIR as an affected responsible public agency.

Metropolitan previously provided correspondence on the Project in August 2020 (copy attached) in response to the Notice of Preparation for the DEIR stating that the Project had the potential to impact Metropolitan's Box Springs Feeder and Perris Valley Pipeline waterlines, Henry Mills Water Treatment Plant, and associated fee-owned property. The attached exhibit provides an updated depiction of these facilities and fee property in relation to the Project. Due to the Project's proximity to these facilities and property we provided a copy of Metropolitan's "Guidelines for Improvements and Construction Projects Proposed in the Area of Metropolitan's Facilities and Rights-of-Way."

While we appreciate that our previous comments were noted and addressed in the DEIR, upon review of the document and the more detailed project depictions provided therein, including Figure 3.0-9, we determined that the Project would require the use of Metropolitan fee owned property on Barton Street. Specifically, Metropolitan owns the portion of the street extending westerly of its centerline. Metropolitan acquired the property, assigned MWD Parcel 1610-1-1, by grant deed recorded as Document No. 87059 on August 29, 1966, and re-recorded as Document No. 99077, on October 6, 1966 (see grant deed attached). As described in the DEIR, the Project would utilize Barton Street during construction and operation and would pave and extend the roadway north of its current terminus to provide access to Parcels 2 and C.

The use of Metropolitan's fee-owned property to extend Barton Street will require the submittal of a land use application (see attached) for the granting of a public road easement or the issuance of an entry permit. Metropolitan will consider the FEIR to evaluate the applicant's request for a public road easement or entry permit. However, Metropolitan's engineering and operations staff will analyze the project and construction documents as well as engineering reports to determine if the potential impacts from the proposed use cannot be adequately mitigated to negate disruptions or interference with current and future operational requirements. Therefore, the potential impacts associated with the use of Metropolitan's fee owned property on Barton Street should be analyzed and described in the FEIR. This discretionary action and the granting of permanent real property rights will be carried out by Metropolitan's Board of Directors.

We appreciate the opportunity to provide input to your planning process, and we look forward to receiving future environmental documentation and design plans regarding this proposed Project. If you have any questions, please contact Alex Marks at (213) 217-7629.

Very truly yours,

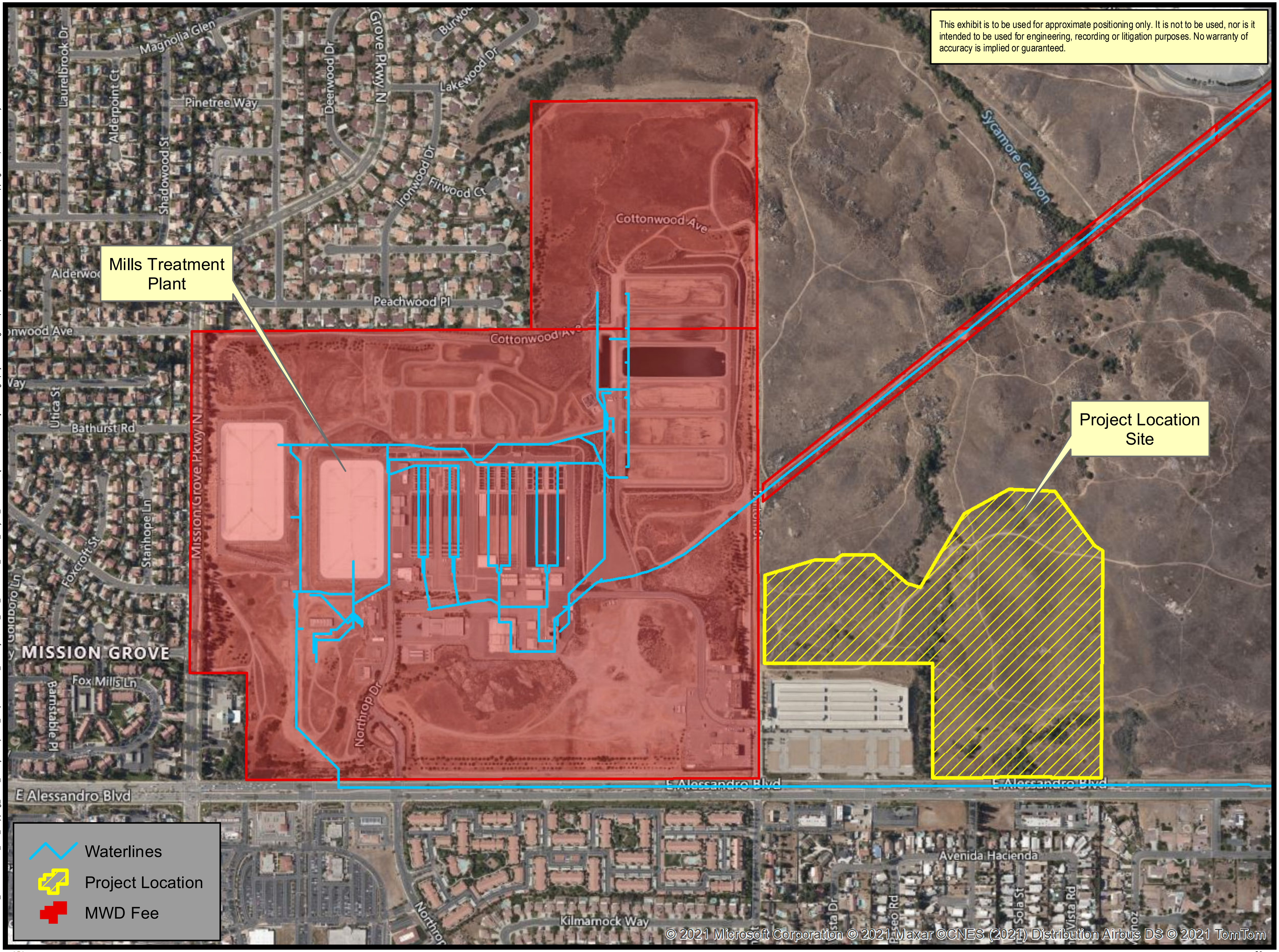
Diane Doesserich

Diane Doesserich
Team Manager, Environmental Planning Section

DD:asm
SharePoint\CityofRiverside_SycamoreHills_External Review

Enclosures:

(1) Map of Metropolitan fee property and facilities in relation to the Project
(2) Metropolitan Grant Deed DOC 99077
(3) Metropolitan Land Use Application
(4) Metropolitan comment letter on the NOP for the Project, dated August 17, 2020



N:\Infrastructure_Unit\Geodetics_and_Mapping_Team_1\Projects\Special_Requests\Tania_Asef\Sycamore_Hills_Distribution_Center_Project_Part2.mxd [Printed 7/12/2021] Photography Date: Bing Prepared by: Tom Bleicher (Geodetics & Mapping Team) Checked by: Alex Marks Job#: GIS21-07-12

The Metropolitan Water District of Southern California
Engineering Services Group

P20-0025, P19-0626, P19-0627, P20-0258, P20-0282, P20-0024 Exhibit 1 - Public Comment Letters

Sycamore Hills Distribution Center DEIR

Recorded at the Request of
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

When Recorded Return to
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
Post Office Box 54153
Los Angeles, California 90054

Mail Tax Statements to
THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
Post Office Box 54153
Los Angeles, California 90054

I.R.S. $41.50

GRANT DEED

MWD - 1610-1-1

For Valuable Consideration, CAROLINE H. TRAUTWEIN; EMILY TRAUTWEIN STODDARD, also known as Emily T. Stoddard; ARCHER I. SCHWEIZER; MARGARET TRAUTWEIN STODDARD, also known as Margaret T. Stoddard, who acquired title as Margaret Trautwein; KENNETH HENDRICK COLVILLE, also known as K. H. Colville; JESSIE COLVILLE POWEL; DOROTHY COLVILLE DANN, and WILLIAM THOMAS COLVILLE, JR., also known as William T. Colville, Jr., hereby grant to

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,
a public corporation,

The following described real property, hereinafter referred to as Parcel A, in the City of Riverside, County of Riverside, State of California; and Parcel B, in the County of Riverside, State of California:

PARCEL A

The southeast quarter of the northeast quarter of Section 8, Township 3 South, Range 4 West, San Bernardino Meridian, in the City of Riverside, County of Riverside, State of California, according to the official plat thereof on file in the office of the Recorder of said County.

MAIL TAX STATEMENTS AS DIRECTED ABOVE

99077
87059

PARCEL B

Lots 1 through 4, inclusive, in Block 5, and the east half of Lots 3 and 4 in Block 4, of Allesandro Tract, in the County of Riverside, State of California, as shown on map recorded in Book 6, page 13 of Maps in the office of said Recorder.

EXCEPT that portion of said land lying southerly of a line 40 feet north of and parallel with the south line of said Section 8, as described in deed to the County of Riverside, recorded June 20, 1956 as Instrument No. 42937, in Book 1930, page 506 of Official Records of said County.

Containing 240 acres, more or less.

Dated: ____________

Caroline H. Trautwein
CAROLINE H. TRAUTWEIN

Margaret Trautwein Stoddard
MARGARET TRAUTWEIN STODDARD, also known as Margaret T. Stoddard, who acquired title as Margaret Trautwein

Emily Trautwein Stoddard
EMILY TRAUTWEIN STODDARD, also known as Emily T. Stoddard

Jessie Colville Powel
JESSIE COLVILLE POWEL

Archer I. Schweizer
ARCHER I. SCHWEIZER

Dorothy Colville Dann
DOROTHY COLVILLE DANN

William Thomas Colville Jr.
WILLIAM THOMAS COLVILLE, JR., also known as William T. Colville, Jr.

By K. H. Colville
K. H. Colville

By W. B. Stoddard
W. B. Stoddard

Attorneys-in-Fact of and for said owners

Kenneth Hendrick Colville
KENNETH HENDRICK COLVILLE, Individually

87059
99077

State of Pennsylvania)
) ss.
County of Lackawanna)

On this 6th day of May, 1966, before me, John R. Swindlehurst, a Notary Public in and for said County and Commonwealth, personally appeared K. H. Colville and W. B. Stoddard, personally known to me to be the persons whose names are subscribed to the within instrument as the Attorneys-in-Fact of and for Caroline H. Trautwein, Emily Trautwein Stoddard, Archer I. Schweizer, Margaret Trautwein Stoddard, Jessie Colville Powel, Dorothy Colville Dann, and William Thomas Colville, Jr., and acknowledged to me that K. H. Colville subscribed the names of Caroline H. Trautwein, Emily Trautwein Stoddard, Archer I. Schweizer, Margaret Trautwein Stoddard, Jessie Colville Powel, Dorothy Colville Dann, and William Thomas Colville, Jr. thereto as principals, and their own names as Attorneys-in-Fact for each and all of said principals and grantors.

WITNESS my hand and official seal the day and year in this certificate first above written.

John R. Swindlehurst
Notary Public in and for
said County and Commonwealth

John R. Swindlehurst
Name (Typed or Printed)

(SEAL)

My Commission Expires January 23, 1967
My Commission Expires

Seal

99077

State of Pennsylvania)
) ss.
County of Lackawanna)

On this 6th day of May, 1966, before me, John R. Swindlehurst, a Notary Public in and for said County and Commonwealth, personally appeared Kenneth Hendrick Colville, individually, known to me to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

John R. Swindlehurst
Notary Public in and for
said County and Commonwealth

John R. Swindlehurst
Name (Typed or Printed)

My Commission Expires January 23, 1967

(SEAL) My Commission Expires

Seal

99077
87059

12-64
RW-1

Certificate of Acceptance

This is to certify that the interest in real property conveyed by this deed dated Mah 6, 1966 from Caroline H. Trautwein, et al

to The Metropolitan Water District of Southern California, a public corporation, is hereby accepted by the undersigned officer on behalf of the Board of Directors of said District pursuant to authority conferred by Resolution 6615 of said Board adopted on November 17, 1964, and the grantee consents to recordation thereof by its duly authorized officer.

Dated August 19, 1966.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

By R A Skinner
General Manager

RECEIVED FOR RECORD
AUG 29 1966
AT 9:00 O'CLOCK A.M.
At Request of
TITLE INS. & TRUST CO.
Recorded in Official Records
of Riverside County, California
Recorder
FEES $

87059

99077

RECEIVED FOR RECORD
OCT 6 1966
AT 9:00 O'CLOCK A.M.
At Request of
TITLE INS. & TRUST CO.
Recorded in Official Records
of Riverside County, California
W.D. Balogh
Recorder
FEES $

End Recorded Document - W.D Balogh, County Recorder

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Real Property Group l 213-217-7750

APPLICATION for USE of REAL PROPERTY

Please complete all sections below.
Incomplete applications will result in delayed processing and responses.
Complete applications do not guarantee approval.

Applicant Information

Company or Organization (if applicable)

Applicant Name:

Email address

Street address

Street address line 2

City

State

Zip

Office Phone

Cell Phone

==

Location of Property (Required)

Request Type:

(MWD will make final determination of agreement type)

Address or Location (include nearest cross streets if address is unavailable)

City

County

Zip

Assessor Parcel Number(s)

==

Proposed Use Description (If not applicable, mark with "n/a")

Property Use Type

Duration

Project Start Date

Project End Date

Description of proposed construction, on-site activities, or improvements:

Is temporary staging or construction area required? ☐ Yes ☐ No

Will security be provided for staging, construction or storage purposes?

Are vehicles and equipment required? ☐ Yes ☐ No

Project involves the following:
(Check all that apply)

☐ Engineering plans
☐ Soil environmental studies
☐ CEQA compliance documentation
☐ Other

If other, please explain below:

E-mail completed form and applicable documents to:
RealEstateServices@mwdh2o.com

FOR INTERNAL USE ONLY:

Metropolitan Parcel Number(s):

Request Type:

Use:

Metropolitan Facility:

Specific Use:

WSO Region:

Pipeline (if applicable):

Metropolitan Station Number(s)

August 17, 2020 **VIA EMAIL**

Veronica Hernandez, Senior Planner
City of Riverside
Community and Economic Development Department
Planning Division
3900 Main Street, 3rd Floor
Riverside, California 92522

Dear Ms. Hernandez:

Review of the Sycamore Hills Distribution Center
Project Notice of Preparation for Environmental Impact Report

The Metropolitan Water District of Southern California (Metropolitan) has reviewed the Notice of Preparation for the Sycamore Hills Distribution Center Project (Project). The proposed Project to develop two warehouse buildings and associated improvements including parking, fire lanes, fencing and walls, landscaping, and water quality treatment areas is located in Riverside County in the City of Riverside. The City of Riverside will be the lead agency for the proposed Project under the California Environmental Quality Act (CEQA). The City of Riverside determined that an Environmental Impact Report (EIR) would be the most appropriate level of environmental document under CEQA to address potentially significant impacts.

Metropolitan is a public agency and regional water wholesaler. It is comprised of 26 member public agencies serving approximately 19 million people in portions of six counties in Southern California, including Riverside County. Metropolitan's mission is to provide its 5,200 square mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way. This letter contains Metropolitan's response to the Notice of Preparation for the Project as a potentially affected public agency.

Metropolitan owns property and owns and operates facilities on and adjacent to the site of the proposed action. As shown on the attached map (Exhibit A), Metropolitan's fee-owned property the Box Springs Feeder, and Mill's Treatment Plant, hereafter referred to as the "Property," are respectively located to the north, and west of the proposed Project. Perris Valley Pipeline is along the boundary of the south side of the proposed Project Site beneath East Alessandro Blvd.

Metropolitan is concerned with the potential impacts to its Property, the pipeline and associated facilities resulting from future excavation, construction, installation of utilities or any development that may occur as a result of the proposed Project activities. Metropolitan must be allowed to maintain its rights-of-way and requires unobstructed access to its facilities in order to maintain and repair its system. Metropolitan will not permit activities that could subject the pipeline to excessive vehicle, impact or vibratory loads.

Please note that Metropolitan does not allow any structures within its Property or easement. Development associated with the proposed Project must not restrict any of Metropolitan's day-to-day operations and/or access to its facilities. Detailed prints of drawings of Metropolitan's pipelines and rights-of-way may be obtained by emailing Metropolitan's Substructures Information Line at Engineeringsubstructures@mwdh2o.com or calling at (213) 217-7663. To assist in preparing plans that are compatible with Metropolitan's facilities, easements and properties, we have enclosed a copy of the "Guidelines for Improvements and Construction Projects Proposed in the Area of Metropolitan's Facilities and Rights-of-Way ". Please note that all submitted designs or plans must clearly identify Metropolitan's facilities and rights-of-way. In order to avoid potential conflicts with Metropolitan's facilities and rights-of-way, Metropolitan requires that detailed design plans for any activities within the vicinity of our facilities, Property or rights-of way be submitted prior to construction for review and written approval. Approval of the proposed Project where it could impact Metropolitan's Property should be contingent on Metropolitan's approval of design plans for the proposed Project.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future environmental documentation and design plans regarding this proposed Project. If you have any questions, please contact Tania Asef at (213) 217-5687.

Very truly yours,

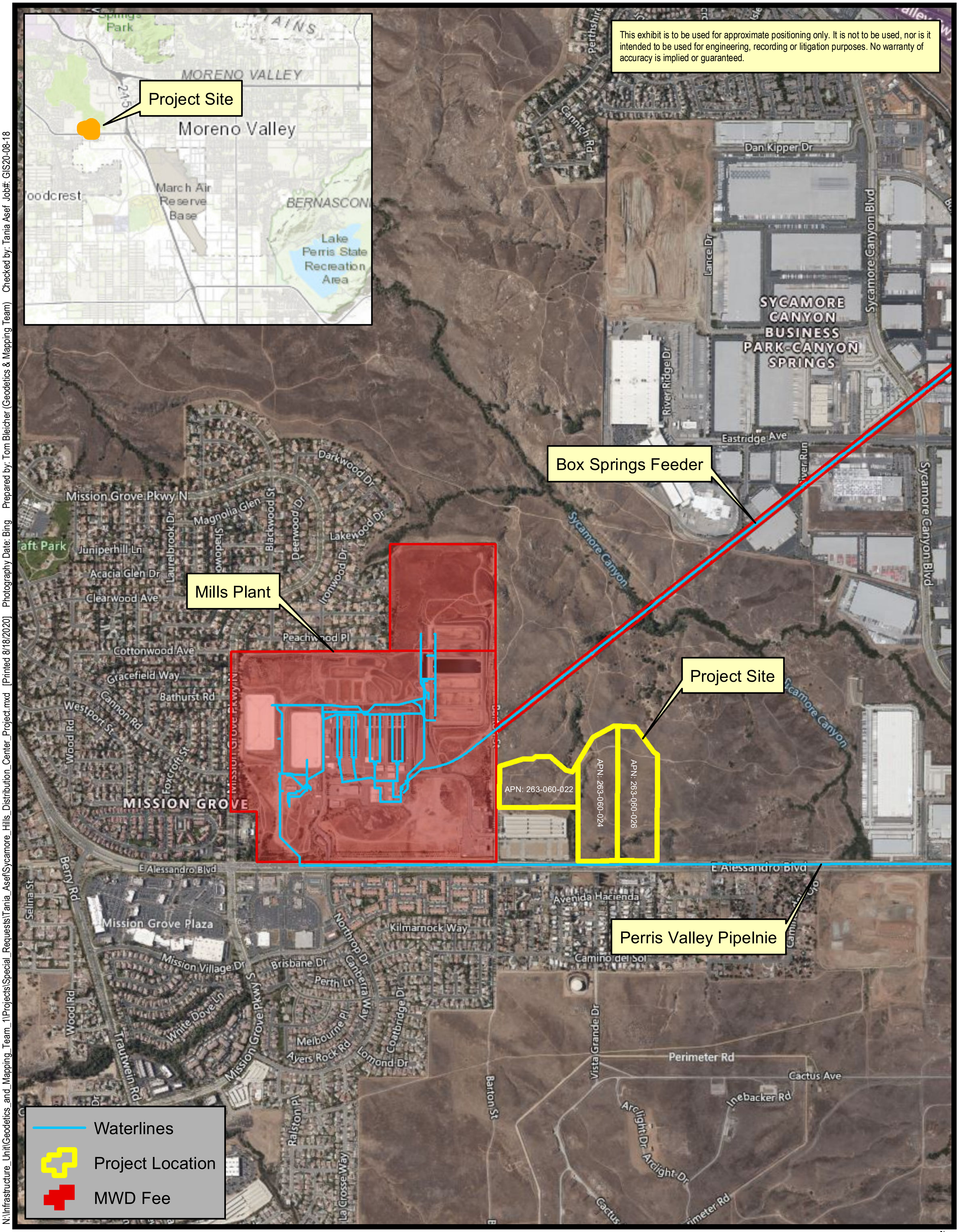
Diane Doesserich

Diane Doesserich
Interim Team Manager, Environmental Planning Section

DD:tsa
SharePoint\CityofRiverside_SycamoreHills_External Review

Enclosures:

(1) Exhibit A: Map of Inland Feeder and the SR-60 World Logistics Center Parkway Interchange Project
(2) Guidelines for Improvements and Construction Projects Proposed in the Area of Metropolitan's Facilities and Rights-of-Way



N:\Infrastructure_Unit\Geodetics_and_Mapping_Team_1\Projects\Special_Requests\Tania_Asef\Sycamore_Hills_Distribution_Center_Project.mxd [Printed 8/18/2020] Photography Date: Bing Prepared by: Tom Bleicher (Geodetics & Mapping Team) Checked by: Tania Asef Job#: GIS20-08-18

Exhibit A

Sycamore Hills NOP - Project Location and Vicinity

Guidelines for
Improvements and Construction Projects Proposed
in the Area of
Metropolitan's Facilities and Rights-of-Way

July 2018

Prepared By:
The Metropolitan Water District of Southern California
Substructures Team, Engineering Services
700 North Alameda Street
Los Angeles, California 90012

Additional Copies: To obtain a copy of this document, please contact the Engineering Services Group, Substructures Team.

Disclaimer

Metropolitan assumes no responsibility for the accuracy of the substructure information herein provided. The user assumes responsibility for verifying substructure locations before excavating and assumes all liability for damage to Metropolitan's facilities as a result of such excavation. Additionally, the user is cautioned to conduct surveys and other field investigations as deemed prudent, to assure that project plans are correct. The appropriate representative from Metropolitan must be contacted at least two working days, before any work activity in proximity to Metropolitan's facilities.

It generally takes 30 days to review project plans and provide written responses. Metropolitan reserves the right to modify requirements based on case-specific issues and regulatory developments.

PUBLICATION HISTORY:

Initial Release	*July 2018*

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1.0 GENERAL INFORMATION

Note: Underground Service Alert at 811 must be notified at least two working days before excavating in proximity to Metropolitan's facilities.

1.1 Introduction

These guidelines provide minimum design and construction requirements for any utilities, facilities, developments, and improvements, or any other projects or activities, proposed in or near Metropolitan Water District of Southern California (Metropolitan) facilities and rights-of-way. Additional conditions and stipulations may also be required depending on project and site specific conditions. Any adverse impacts to Metropolitan's conveyance system, as determined by Metropolitan, will need to be mitigated to its satisfaction.

All improvements and activities must be designed so as to allow for removal or relocation at builder or developer expense, as set forth in the paramount rights provisions of Section 20.0. Metropolitan shall not be responsible for repair or replacement of improvements, landscaping or vegetation in the event Metropolitan exercises its paramount rights powers.

1.2 Submittal and Review of Project Plans/Utilities and Maps

Metropolitan requires project plans/utilities be submitted for all proposed activities that may impact Metropolitan's facilities or rights-of-way. Project plans shall include copies of all pertinent utilities, sewer line, storm drain, street improvement, grading, site development, landscaping, irrigation and other plans, all tract and parcel maps, and all necessary state and federal environmental documentation. Metropolitan will review the project plans and provide written approval, as it pertains to Metropolitan's facilities and rights-of-way. Written approval from Metropolitan must be obtained, prior to the start of any activity or construction in the area of Metropolitan's facilities or rights-of-way. Once complete project plans and supporting documents are submitted to Metropolitan, it generally takes 30 days to review and to prepare a detailed written response. Complex engineering plans that have the potential for significant impacts on Metropolitan's facilities or rights-of-way may require a longer review time.

Project plans, maps, or any other information should be submitted to Metropolitan's Substructures Team at the following mailing address:

Attn: Substructures Team
The Metropolitan Water District of Southern California
700 North Alameda St.
Los Angeles, CA 90012

General Mailing Address: P.O. Box 54153
Los Angeles, CA 90054-0153

Email: EngineeringSubstructures@mwdh2o.com

For additional information, or to request prints of detailed drawings for Metropolitan's facilities and rights-of-way, please contact Metropolitan's Substructures Team at 213-217-7663 or EngineeringSubstructures@mwdh2o.com.

1.3 Identification of Metropolitan's Facilities and Rights-of-Way

Metropolitan's facilities and rights-of-way must be fully shown and identified as Metropolitan's, with official recording data, on the following:

A. All applicable plans

B. All applicable tract and parcel maps

Metropolitan's rights-of-ways and existing survey monuments must be tied dimensionally to the tract or parcel boundaries. Metropolitan's Records of Survey must be referenced on the tract and parcel maps with the appropriate Book and Page.

2.0 General Requirements

2.1 Vehicular Access

Metropolitan must have vehicular access along its rights-of-way at all times for routine inspection, patrolling, operations, and maintenance of its facilities and construction activities. All proposed improvements and activities must be designed so as to accommodate such vehicular access.

2.2 Fences

Fences installed across Metropolitan's rights-of-way must include a 16-foot-wide gate to accommodate vehicular access by Metropolitan. Additionally, gates may be required at other specified locations to prevent unauthorized entry into Metropolitan's rights-of-way.

All gates must accommodate a Metropolitan lock or Knox-Box with override switch to allow Metropolitan unrestricted access. There should be a minimum 20-foot setback for gates from the street at the driveway approach. The setback is necessary to allow Metropolitan vehicles to safely pull off the road prior to opening the gate.

2.3 Driveways and Ramps

Construction of 16-foot-wide commercial-type driveway approaches is required on both sides of all streets that cross Metropolitan's rights-of-way. Access ramps, if necessary, must be a minimum of 16 feet wide.

There should be a minimum 20-foot setback for gates from the street at the driveway approach. Grades of ramps and access roads must not exceed 10 percent; if the slope of an access ramp or road must exceed 10 percent due to topography, then the ramp or road must be paved.

2.4 Walks, Bike Paths, and Trails

All walkways, bike paths, and trails along Metropolitan's rights-of-way must be a minimum 12-foot wide and have a 50-foot or greater radius on all horizontal curves if also used as Metropolitan's access roads. Metropolitan's access routes, including all walks and drainage facilities crossing the access routes, must be constructed to American Association of State Highway and Transportation Officials (AASHTO) H-20 loading standards (see Figure 1). Additional requirements will be placed on equestrian trails to protect the water quality of Metropolitan's pipelines and facilities.

2.5 Clear Zones

A 20-foot-wide clear zone is required to be maintained around Metropolitan's manholes and other above-ground facilities to accommodate vehicular access and maintenance. The clear zone should slope away from Metropolitan's facilities on a grade not to exceed 2 percent.

2.6 Slopes

Cut or fill slopes proposed within Metropolitan's rights-of-way must not exceed 10 percent. The proposed grade must not worsen the existing condition. This restriction is required to facilitate Metropolitan use of construction and maintenance equipment and allow uninhibited access to above-ground and below-ground facilities.

2.7 Structures

Construction of structures of any type is not allowed within the limits of Metropolitan's rights-of-way to avoid interference with the operation and maintenance of Metropolitan's facilities and possible construction of future facilities.

Footings and roof eaves of any proposed buildings adjacent to Metropolitan's rights-of-way must meet the following criteria:

A. Footings and roof eaves must not encroach onto Metropolitan's rights-of-way.

B. Footings must not impose any additional loading on Metropolitan's facilities.

C. Roof eaves must not overhang onto Metropolitan's rights-of-way.

Detailed plans of footings and roof eaves adjacent to Metropolitan's rights-of-way must be submitted for Metropolitan's review and written approval, as pertains to Metropolitan's facilities.

2.8 Protection of Metropolitan Facilities

Metropolitan facilities within its rights-of-way, including pipelines, structures, manholes, survey monuments, etc., must be protected from damage by the project proponent or property owner, at no expense to Metropolitan. The exact location, description and method of protection must be shown on the project plans.

2.9 Potholing of Metropolitan Pipelines

Metropolitan's pipelines must be potholed in advance, if the vertical clearance between a proposed utility and Metropolitan's pipeline is indicated to be 4 feet or less. A Metropolitan representative must be present during the potholing operation and will assist in locating the pipeline. Notice is required, a minimum of three working days, prior to any potholing activity.

2.10 Jacked Casings or Tunnels

A. General Requirements

Utility crossings installed by jacking, or in a jacked casing or tunnel under/over a Metropolitan pipeline, must have at least 3 feet of vertical clearance between the outside diameter of the pipelines and the jacked pipe, casing, or tunnel. The actual cover over Metropolitan's pipeline shall be determined by potholing, under Metropolitan's supervision.

Utilities installed in a jacked casing or tunnel must have the annular space between the utility and the jacked casing or tunnel filled with grout. Provisions must be made for grouting any voids around the exterior of the jacked pipe, casing, or tunnel.

B. Jacking or Tunneling Procedures

Detailed jacking, tunneling, or directional boring procedures must be submitted to Metropolitan for review and approval. The procedures must cover all aspects of operation, including, but not limited to, dewatering, ground control, alignment control, and grouting pressure. The submittal must also include procedures to be used to control sloughing, running, or wet ground, if encountered. A minimum 10-foot clearance must be maintained between the face of the tunneling or receiving pits and outside edges of Metropolitan's facility.

C. Shoring

Detailed drawings of shoring for jacking or receiving pits must be submitted to Metropolitan for review and written-approval. (See Section 10 for shoring requirements).

D. Temporary Support

Temporary support of Metropolitan's pipelines may be required when a utility crosses under a Metropolitan pipeline and is installed by means of an open trench. Plans for temporary support must be reviewed and approved in writing by Metropolitan. (See Section 11, Supports of Metropolitan Facilities).

3.0 Landscaping

3.1 Plans

All landscape plans must show the location and limits of Metropolitan's right-of-way and the location and size of Metropolitan's pipeline and related facilities therein. All landscaping and vegetation shall be subject to removal without notice, as may be required by Metropolitan for ongoing maintenance, access, repair, and construction activities. Metropolitan will not be financially responsible for the removal of any landscaping and vegetation.

3.2 Drought-Tolerant Native and California Friendly Plants

Metropolitan recommends use of drought-tolerant native and California Friendly® plants (excluding sensitive plants) on proposed projects. For more information regarding California Friendly® plants refer to www.bewaterwise.com.

3.3 Trees

Trees are generally prohibited within Metropolitan's rights-of-way as they restrict Metropolitan's ability to operate, maintain and/or install new pipeline(s) located within these rights-of-way. Metropolitan will not be financially responsible for the removal and replacement of any existing trees should they interfere with access and any current or future Metropolitan project located within the right-of-way.

3.4 Other Vegetation

Shrubs, bushes, vines, and groundcover are generally allowed within Metropolitan's rights-of-way. Larger shrubs are not allowed on Metropolitan fee properties; however, they may be allowed within its easements if planted no closer than 15 feet from the outside edges of existing or future Metropolitan facilities. Only groundcover is allowed to be planted directly over Metropolitan pipeline, turf blocks or similar is recommended to accommodate our utility vehicle access. Metropolitan will not be financially responsible for the removal and replacement of the vegetation should it interfere with access and any current or future Metropolitan project.

3.5 Irrigation

Irrigation systems are acceptable within Metropolitan's rights-of-way, provided valves and controllers are located near the edges of the right-of-way and do not interfere with Metropolitan vehicular access. A shutoff valve should also be located along the edge of the right-of-way that will allow the shutdown of the system within the right-of-way should Metropolitan need to do any excavation. No pooling or saturation of water above Metropolitan's pipeline and right-of-way is allowed. Additional restrictions apply to non-potable water such as Recycled Water and are covered on Table 3 of Page 20.

3.6 Metropolitan Vehicular Access

Landscape plans must show Metropolitan vehicular access to Metropolitan's facilities and rights-of-way and must be maintained by the property owner or manager or homeowners association at all times. Walkways, bike paths, and trails within Metropolitan's rights-of-way may be used as Metropolitan access routes. (See Section 2.4, Walks, Bike Paths, and Trails).

4.0 General Utilities

Note: For non-potable piping like sewer, hazardous fluid, storm drain, disinfected tertiary recycled water and recycled water irrigation see Table 1 through Table 3.

4.1 Utility Structures

Permanent utility structures (e.g., manholes, power poles, pull boxes, electrical vaults, etc.) are not allowed within Metropolitan's rights-of-way. Metropolitan requests that all permanent utility structures within public streets be placed as far from its pipelines and facilities as practical, but not closer than 5 feet from the outside edges of Metropolitan facilities.

Note: Non-potable utility pipelines are an exception to the 5-foot minimum clearance. Non-potable utility pipelines should have 10 feet of separation.

4.2 Utility Crossings

Metropolitan requests a minimum of 1 foot of vertical clearance between Metropolitan's pipeline and any utility crossing the pipeline. Utility lines crossing Metropolitan's pipelines must be as perpendicular to the pipeline as possible. Cross-section drawings, showing proposed locations and elevations of utility lines and locations of Metropolitan's pipelines and limits of rights-of-way, must be submitted with utility plans, for all crossings. Metropolitan's pipeline must be potholed under Metropolitan's supervision at the crossings (See Section 2.9).

4.3 Longitudinal Utilities

Installation of longitudinal utilities is generally not allowed along Metropolitan's rights-of-way. Within public streets, Metropolitan requests that all utilities parallel to Metropolitan's pipelines and appurtenant structures (facilities) be located as far from the facilities as possible, with a minimum clearance of 5 feet from the outside edges of the pipeline.

Note: Non-potable utility pipelines are an exception to the 5-foot minimum clearance. Non-potable utility pipelines should have 10 feet of separation (for more information See Table 1 on Page 18).

4.4 Underground Electrical Lines

Underground electrical conduits (110 volts or greater) which cross a Metropolitan's pipeline must have a minimum of 1 foot of vertical clearance between Metropolitan's pipeline and the electrical lines. Longitudinal electrical lines, including pull boxes and vaults, in public streets should have a minimum separation of 5 feet from the edge of a Metropolitan pipeline or structures.

4.5 Fiber Optic Lines

Fiber optic lines installed by directional boring require a minimum of 3 feet of vertical clearance when boring is over Metropolitan's pipelines and a minimum of 5 feet of vertical clearance when boring is under Metropolitan's pipelines. Longitudinal fiber optic lines, including pull boxes, in public streets should have a minimum separation of 5 feet from the edge of a Metropolitan pipelines or structures. Potholing must be performed, under Metropolitan's supervision, to verify the vertical clearances are maintained.

4.6 Overhead Electrical and Telephone Lines

Overhead electrical and telephone lines, where they cross Metropolitan's rights-of-way, must have a minimum 35 feet of clearance, as measured from the ground to the lowest point of the overhead line. Overhead electrical lines poles must be located at least 30 feet laterally from the edges of Metropolitan's facilities or outside Metropolitan's right-of-way, whichever is greater.

Longitudinal overhead electrical and or telephone lines in public streets should have a minimum separation of 10 feet from the edge of a Metropolitan pipelines or structures where possible.

4.7 Sewage Disposal Systems

Sewage disposal systems, including leach lines and septic tanks, must be a minimum of 100 feet from the outside limits of Metropolitan's rights-of-way or the edge of its facilities, whichever is greater. If soil conditions are poor, or other adverse site-specific conditions exist, a minimum distance of 150 feet is required. They must also comply with local and state health code requirements as they relate to sewage disposal systems in proximity to major drinking water supply pipelines.

4.8 Underground Tanks

Underground tanks containing hazardous materials must be a minimum of 100 feet from the outside limits of Metropolitan's rights-of-way or edge of its facilities, whichever is greater. In addition, groundwater flow should be considered with the placement of underground tanks down-gradient of Metropolitan's facilities.

5.0 Specific Utilities: Non-Potable Utility Pipelines

In addition to Metropolitan's general requirements, installation of non-potable utility pipelines (e.g., storm drains, sewers, and hazardous fluids pipelines) in Metropolitan's rights-of-way and public street rights-of-way must also conform to the State Water Resources Control Board's Division of Drinking Water (DDW) regulation (Waterworks Standards) and guidance for separation of water mains and non-potable pipelines and to applicable local county health code requirements. Written approval is required from DDW for the implementation of alternatives to the Waterworks Standards and, effective December 14, 2017, requests for alternatives to the Waterworks Standards must include information consistent with: DDW's Waterworks Standards Main Separation Alternative Request Checklist.

In addition to the following general guidelines, further review of the proposed project must be evaluated by Metropolitan and requirements may vary based on site specific conditions.

A. Sanitary Sewer and Hazardous Fluids (General Guideline See Table 1 on Page 18)

B. Storm Drain and Recycled Water (General Guideline See Table 2 on Page 19)

C. Irrigation with Recycled Water (General Guideline See Table 3 on Page 20)

D. Metropolitan generally does not allow Irrigation with recycled water to be applied directly above its treated water pipelines

E. Metropolitan requests copies of project correspondence with regulating agencies (e.g., Regional Water Quality Control Board, DDW); regarding the application of recycled water for all projects located on Metropolitan's rights-of-way

6.0 Cathodic Protection/Electrolysis Test Stations

6.1 Metropolitan Cathodic Protection

Metropolitan's existing cathodic protection facilities in the vicinity of any proposed work must be identified prior to any grading or excavation. The exact location, description, and type of protection must be shown on all project plans. Please contact Metropolitan for the location of its cathodic protection stations.

6.2 Review of Cathodic Protection Systems

Metropolitan must review any proposed installation of impressed-current cathodic protection systems on pipelines crossing or paralleling Metropolitan's pipelines to determine any potential conflicts with Metropolitan's existing cathodic protection system.

7.0 Drainage

7.1 Drainage Changes Affecting Metropolitan Rights-of-Way

Changes to existing drainage that could affect Metropolitan's rights-of-way require Metropolitan's approval. The project proponent must provide acceptable solutions to ensure Metropolitan's rights-of-way are not negatively affected by changes in the drainage conditions. Plans showing the changes, with a copy of a supporting hydrology report and hydraulic calculations, must be submitted to Metropolitan for review and approval. Long term maintenance of any proposed drainage facilities must be the responsibility of the project proponent, City, County, homeowner's association, etc., with a clear understanding of where this responsibility lies. If drainage must be discharged across Metropolitan's rights-of-way, it must be carried across by closed conduit or lined open channel and must be shown on the plans.

7.2 Metropolitan's Blowoff and Pumpwell Structures

Any changes to the existing local watercourse systems will need to be designed to accommodate Metropolitan's blowoff and pumpwell structures, which periodically convey discharged water from Metropolitan's blowoff and pumping well structures during pipeline dewatering. The project proponents' plans should include details of how these discharges are accommodated within the proposed development and must be submitted to Metropolitan for review and approval. Any blowoff discharge lines impacted must be modified accordingly at the expense of the project proponent.

8.0 Grading and Settlement

8.1 Changes in Cover over Metropolitan Pipelines

The existing cover over Metropolitan's pipelines must be maintained unless Metropolitan determines that proposed changes in grade and cover do not pose a hazard to the integrity of the pipeline or an impediment to its maintenance capability. Load and settlement or rebound due to change in cover over a Metropolitan pipeline or ground in the area of Metropolitan's rights-of-way will be factors considered by Metropolitan during project review.

In general, the minimum cover over a Metropolitan pipeline is 4 feet and the maximum cover varies per different pipeline. Any changes to the existing grade may require that Metropolitan's pipeline be potholed under Metropolitan's supervision to verify the existing cover.

8.2 Settlement

Any changes to the existing topography in the area of Metropolitan's pipeline or right-of-way that result in significant settlement or lateral displacement of Metropolitan's pipelines are not acceptable. Metropolitan may require submittal of a soils report showing the predicted settlement of the pipeline at 10-foot intervals for review. The data must be carried past the point of zero change in each direction and the actual size and varying depth of the fill must be considered when determining the settlement. Possible settlement due to soil collapse, rebound and lateral displacement must also be included.

In general, the typical maximum allowed deflection for Metropolitan's pipelines must not exceed a deflection of 1/4-inch for every 100 feet of pipe length. Metropolitan may require additional information per its Geotechnical Guidelines. Please contact Metropolitan's Substructures Team for a copy of the Geotechnical Guidelines.

9.0 Construction Equipment

9.1 Review of Proposed Equipment

Use of equipment across or adjacent to Metropolitan's facilities is subject to prior review and written approval by Metropolitan. Excavation, backfill, and other work in the vicinity of Metropolitan's facilities must be performed only by methods and with equipment approved by Metropolitan. A list of all equipment to be used must be submitted to Metropolitan a minimum of 30 days before the start of work.

A. For equipment operating within paved public roadways, equipment that imposes loads not greater than that of an AASHTO H-20 vehicle (see Figure 1 on Page 21) may operate across or adjacent to Metropolitan's pipelines provided the equipment operates in non-vibratory mode and the road remains continuously paved.

B. For equipment operating within unpaved public roadways, when the total cover over Metropolitan's pipeline is 10 feet or greater, equipment imposing loads no greater than those imposed by an AASHTO H-20 vehicle may operate over or adjacent to the pipeline provided the equipment is operated in non-vibratory mode. For crossings, vehicle path shall be maintained in a smooth condition, with no breaks in grade for 3 vehicle lengths on each side of the pipeline.

9.2 Equipment Restrictions

In general, no equipment may be used closer than 20 feet from all Metropolitan above-ground structures. The area around the structures should be flagged to prevent equipment encroaching into this zone.

9.3 Vibratory Compaction Equipment

Vibratory compaction equipment may not be used in vibratory mode within 20 feet of the edge of Metropolitan's pipelines.

9.4 Equipment Descriptions

The following information/specifications for each piece of equipment should be included on the list:

A. A description of the equipment, including the type, manufacturer, model year, and model number. For example, wheel tractor-scraper, 1990 Caterpillar 627E.

B. The empty and loaded total weight and the corresponding weight distribution. If equipment will be used empty only, it should be clearly stated.

C. The wheel base (for each axle), tread width (for each axle), and tire footprint (width and length) or the track ground contact (width and length), and track gauge (center to center of track).

10.0 Excavations Close to Metropolitan Facilities

10.1 Shoring Design Submittal

Excavation that impacts Metropolitan's facilities requires that the contractor submit an engineered shoring design to Metropolitan for review and acceptance a minimum of 30 days before the scheduled start of excavation. Excavation may not begin until the shoring design is accepted in writing by Metropolitan.

Shoring design submittals must include all required trenches, pits, and tunnel or jacking operations and related calculations. Before starting the shoring design, the design engineer should consult with Metropolitan regarding Metropolitan's requirements, particularly as to any special procedures that may be required.

10.2 Shoring Design Requirements

Shoring design submittals must be stamped and signed by a California registered civil or structural engineer. The following requirements apply:

A. The submitted shoring must provide appropriate support for soil adjacent to and under Metropolitan's facilities.

B. Shoring submittals must include detailed procedures for the installation and removal of the shoring.

C. Design calculations must follow the Title 8, Chapter 4, Article 6 of the California Code of Regulations (CCR) guidelines. Accepted methods of analysis must be used.

D. Loads must be in accordance with the CCR guidelines or a soils report by a geotechnical consultant.

E. All members must be secured to prevent sliding, falling, or kickouts.

Metropolitan's pipelines must be located by potholing under Metropolitan's supervision before the beginning construction. Use of driven piles within 20 feet of the centerline of Metropolitan's pipeline is not allowed. Piles installed in drilled holes must have a minimum 2-foot clearance between Metropolitan's pipeline and the edge of the drilled hole, and a minimum of 1-foot clearance between any part of the shoring and Metropolitan's pipeline.

11.0 Support of Metropolitan Facilities

11.1 Support Design Submittal

If temporary support of a Metropolitan facility is required, the contractor shall submit a support design plan to Metropolitan for review and approval a minimum of 30 days before the scheduled start of work. Work may not begin until the support design is approved in writing by Metropolitan. Before starting design, the design engineer should consult with Metropolitan regarding Metropolitan's requirements.

11.2 Support Design Requirements

Support design submittals must be prepared, stamped, and signed by a California registered civil or structural engineer. The following requirements apply:

A. Support drawings must include detailed procedures for the installation and removal of the support system.

B. Design calculations must follow accepted practices, and accepted methods of analysis must be used.

C. Support designs must show uniform support of Metropolitan's facilities with minimal deflection.

D. The total weight of the facility must be transferred to the support system before supporting soil is fully excavated.

E. All members must be secured to prevent sliding, falling, or kickouts.

12.0 Backfill

12.1 Metropolitan Pipeline Not Supported

In areas where a portion of Metropolitan pipeline is not supported during construction, the backfill under and to an elevation of 6 inches above the top of the pipeline must be one-sack minimum cement sand slurry. To prevent adhesion of the slurry to Metropolitan's pipeline, a minimum 6-mil-thick layer of polyethylene sheeting or similar approved sheeting must be placed between the concrete support and the pipeline.

12.2 Metropolitan Pipeline Partially Exposed

In areas where a Metropolitan pipeline is partially exposed during construction, the backfill must be a minimum of 6 inches above the top of the pipeline with sand compacted to minimum 90 percent compaction.

12.3 Metropolitan Cut and Cover Conduit on Colorado River Aqueduct (CRA)

In areas where a Metropolitan cut and cover conduit is exposed, the following guidelines apply:

A. No vehicle or equipment shall operate over or cross the conduit when the cover is less than 3 feet.

B. Track-type dozer with a gross vehicle weight of 12,000 lbs or less may be used over the conduit when the cover is a minimum of 3 feet.

C. Wheeled vehicles with a gross vehicle weight of 8,000 lbs or less may operate over the conduit when the cover is a minimum of 4 feet.

D. Tracked dozer or wheeled vehicle should be used to push material over the conduit from the side.

E. Tracked dozer or wheeled vehicle should gradually increase cover on one side of the conduit and then cross the conduit and increase cover on the other side of the conduit. The cover should be increased on one side of the conduit until a maximum of 2 feet of fill has been placed. The cover over the conduit is not allowed to be more than 2 feet higher on one side of the conduit than on the other side.

F. The cover should be gradually increased over the conduit until the grade elevations have been restored.

13.0 Piles

13.1 Impacts on Metropolitan Pipelines

Pile support for structures could impose lateral, vertical and seismic loads on Metropolitan's pipelines. Since the installation of piles could also cause settlement of Metropolitan pipelines, a settlement and/or lateral deformation study may be required for pile installations within 50 feet of Metropolitan's pipelines. Metropolitan may require additional information per its Geo-technical Guidelines for pile installation. Please contact Metropolitan's Substructures Team for a copy of the Geotechnical Guidelines.

13.2 Permanent Cast-in-place Piles

Permanent cast-in-place piles must be constructed so that down drag forces of the pile do not act on Metropolitan's pipeline. The pile must be designed so that down drag forces are not developed from the ground surface to springline of Metropolitan's pipeline.

Permanent cast-in-place piles shall not be placed closer than 5 feet from the edge of Metropolitan's pipeline. Metropolitan may require additional information per its Geo-technical Guidelines for pile installation. Please contact Metropolitan's Substructures Team for a copy of the Geotechnical Guidelines.

14.0 Protective Slabs for Road Crossings Over Metropolitan Pipelines

Protective slabs must be permanent cast-in-place concrete protective slabs configured in accordance with Drawing SK-1 (See Figure 2 on Page 22).

The moments and shear for the protective slab may be derived from the American Association of State Highway and Transportation Officials (AASHTO). The following requirements apply:

A. The concrete must be designed to meet the requirements of AASHTO

B. Load and impact factors must be in accordance with AASHTO. Accepted methods of analysis must be used.

C. The protective slab design must be stamped and signed by a California registered civil or structural engineer and submitted to Metropolitan with supporting calculations for review and approval.

Existing protective slabs that need to be lengthened can be lengthened without modification, provided the cover and other loading have not been increased.

15.0 Blasting

At least 90 days prior to the start of any drilling for rock excavation blasting, or any blasting in the vicinity of Metropolitan's facilities, a site-specific blasting plan must be submitted to Metropolitan for review and approval. The plan must consist of, but not be limited to, hole diameters, timing sequences, explosive weights, peak particle velocities (PPV) at Metropolitan pipelines/structures, and their distances to blast locations. The PPV must be estimated based on a site-specific power law equation. The power law equation provides the peak particle velocity versus the scaled distance and must be calibrated based on measured values at the site.

16.0 Metropolitan Plan Review Costs, Construction Costs and Billing

16.1 Plan Review Costs

Metropolitan plan reviews requiring 8 labor hours or less are generally performed at no cost to the project proponent. Metropolitan plan reviews requiring more than 8 labor hours must be paid by the project proponent, unless the project proponent has superior rights at the project area. The plan review will include a written response detailing Metropolitan's comments, requirements, and/or approval.

A deposit of funds in the amount of the estimated cost and a signed letter agreement will be required from the project proponent before Metropolitan begins or continues a detailed engineering plan review that exceeds 8 labor hours.

16.2 Cost of Modification of Facilities Performed by Metropolitan

Cost of modification work conducted by Metropolitan will be borne by the project proponent, when Metropolitan has paramount/prior rights at the subject location.

Metropolitan will transmit a cost estimate for the modification work to be performed (when it has paramount/prior rights) and will require that a deposit, in the amount of the estimate, be received before the work will be performed.

16.3 Final Billing

Final billing will be based on the actual costs incurred, including engineering plan review, inspection, materials, construction, and administrative overhead charges calculated in accordance with Metropolitan's standard accounting practices. If the total cost is less than the deposit, a refund will be made; however, if the cost exceeds the deposit, an invoice for the additional amount will be forwarded for payment.

17.0 Street Vacations and Reservation of Easements for Metropolitan

A reservation of an easement is required when all or a portion of a public street where Metropolitan facilities are located is to be vacated. The easement must be equal to the street width being vacated or a minimum 40 feet. The reservation must identify Metropolitan as a "public entity" and not a "public utility," prior to recordation of the vacation or tract map. The reservation of an easement must be submitted to Metropolitan for review prior to final approval.

18.0 Metropolitan Land Use Guidelines

If you are interested in obtaining permission to use Metropolitan land (temporary or long term), a Land Use Form must be completed and submitted to Metropolitan for review and consideration. A nonrefundable processing fee is required to cover Metropolitan's costs for reviewing your request. Land Use Request Forms can be found at:

http://mwdh2o.com/PDF_Doing_Your_Business/4.7.1_Land_Use_Request_form_revised.pdf

The request should be emailed to RealEstateServices@mwdh2o.com,or contact the Real Property Development and Management (RPDM) Group at (213) 217-7750.

After the initial application form has been submitted, Metropolitan may require the following in order to process your request:

A. A map indicating the location(s) where access is needed, and the location & size (height, width and depth) of any invasive subsurface activity (boreholes, trenches, etc.).

B. The California Environmental Quality Act (CEQA) document(s) or studies that have been prepared for the project (e.g., initial study, notice of exemption, Environmental Impact Report (EIR), Mitigated Negative Declaration (MND), etc.).

C. A copy of an ACORD insurance certification naming Metropolitan as an additional insured, or a current copy of a statement of self-insurance.

D. Confirmation of the legal name of the person(s) or entity(ies) that are to be named as the permittee(s) in the entry permit.

E. Confirmation of the purpose of the land use.

F. The name of the person(s) with the authority to sign the documents and any specific signature title block requirements for that person or any other persons required to sign the document (i.e., legal counsel, Board Secretary/Clerk, etc.).

G. A description of any vehicles that will have access to the property. The exact make or model information is not necessary; however, the general vehicle type, expected maximum dimensions (height, length, width), and a specific maximum weight must be provided.

Land use applications and proposed use of the property must be compatible with Metropolitan's present and/or future use of the property. Any preliminary review of your request by Metropolitan shall not be construed as a promise to grant any property rights for the use of Metropolitan's property.

19.0 Compliance with Environmental Laws and Regulations

As a public agency, Metropolitan is required to comply with all applicable environmental laws and regulations related to the activities it carries out or approves. Consequently, project plans, maps, and other information must be reviewed to determine Metropolitan's obligations pursuant to state and federal environmental laws and regulations, including, but not limited to:

A. California Environmental Quality Act (CEQA) (Public Resources Code 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 1500-15387)

B. Federal Endangered Species Act (ESA) of 1973, 16 U.S.C. §§ 1531, et seq.

C. California Fish and Game Code Sections 2050-2069 (California ESA)

D. California Fish and Game Code Section 1602

E. California Fish and Game Code Sections 3511, 4700, 5050 and 5515 (California fully protected species)

F. Federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. §§ 703-712

G. Federal Clean Water Act (including but not limited to Sections 404 and 401) 33 U.S.C. §§ 1342, 1344)

H. Porter Cologne Water Quality Control Act of 1969, California Water Code §§ 13000-14076.

I. Title 22, California Code of Regulations, Chapter 16 (California Waterworks Standards), Section 64572 (Water Main Separation)

Metropolitan may require the project applicant to pay for any environmental review, compliance and/or mitigation costs incurred to satisfy such legal obligations.

20.0 Paramount Rights / Metropolitan's Rights within Existing Rights-of-Way

Facilities constructed within Metropolitan's rights-of-way shall be subject to the paramount right of Metropolitan to use its rights-of-way for the purpose for which they were acquired. If at any time Metropolitan or its assigns should, in the exercise of their rights, find it necessary to remove or relocate any facilities from its rights-of-way, such removal and replacement or relocation shall be at the expense of the owner of the facility.

21.0 Disclaimer and Information Accuracy

Metropolitan assumes no responsibility for the accuracy of the substructure information herein provided. The user assumes responsibility for verifying substructure locations before excavating and assumes all liability for damage to Metropolitan's facilities as a result of such excavation. Additionally, the user is cautioned to conduct surveys and other field investigations as you may deem prudent, to assure that your project plans are correct. The relevant representative from Metropolitan must be called at least two working days, before any work activity in proximity to Metropolitan's facilities.

It generally takes 30 days to review project plans and provide written responses. Metropolitan reserves the right to modify requirements based on case-specific issues and regulatory developments.

Table 1: General Guidelines for Pipeline Separation between Metropolitan's Pipeline[1] and Sanitary Sewer[2] or Hazardous Fluid Pipeline[3]

<u>Pipeline Crossings</u>	Metropolitan requires that sanitary sewer and hazardous fluid pipelines that cross Metropolitan's pipelines have special pipe construction (no joints) **and** secondary containment[4]. This is required for the full width of Metropolitan's rights-of-way or within 10 feet tangent to the outer edges of Metropolitan's pipeline within public streets. Additionally, sanitary sewer and hazardous fluid pipelines crossing Metropolitan's pipelines must be perpendicular and maintain a minimum 1-foot vertical clearance between the top and the bottom of Metropolitan's pipeline and the pipe casing. These requirements apply to all sanitary sewer crossings regardless if the sanitary sewer main is located below or above Metropolitan's pipeline.
<u>Parallel Pipeline</u>	Metropolitan generally does not permit the installation of longitudinal pipelines along its rights-of-way. Within public streets, Metropolitan requires that all parallel sanitary sewer, hazardous fluid pipelines and/or non-potable utilities be located a minimum of 10 feet from the outside edges of Metropolitan's pipelines. When 10-foot horizontal separation criteria cannot be met, longitudinal pipelines require special pipe construction (no joints) **and** secondary containment[4].
<u>Sewer Manhole</u>	Sanitary sewer manholes are not allowed within Metropolitan's rights-of-way. Within public streets, Metropolitan requests manholes parallel to its pipeline be located a minimum of 10 feet from the outside edges of its pipelines. When 10 foot horizontal separation criteria cannot be met, the structure must have secondary containment[5].

<u>Notes:</u>

[1] *Separation distances are measured from the outer edges of each pipe.*

[2] *Sanitary sewer requirements apply to all recycled water treated to less than disinfected tertiary recycled water (disinfected secondary recycled water or less).* Recycled water definitions are included in Title 22, California Code of Regulations, Chapter 3 (Water Recycling Criteria), Section 60301.

[3] *Hazardous fluids include e.g., oil, fuels, chemicals, industrial wastes, wastewater sludge, etc.*

[4] *Secondary Containment for Pipeline - Secondary containment consists of a continuous pipeline sleeve (no joints). Examples acceptable to Metropolitan include welded steel pipe with grout in annular space and cathodic protection (unless coated with non-conductive material) and High Density Polyethylene (HDPE) pipe with fusion-welded joints.*

[5] *Secondary Containment for Structures – Secondary containment consists of external HDPE liner or other approved method.*

Table 2: General Guidelines for Pipeline Separation between Metropolitan's Pipeline[1] and Storm Drain and/or Disinfected Tertiary Recycled Water[2]

Pipeline Crossings	Metropolitan requires crossing pipelines to be special pipe construction (no joints) or have secondary containment[3] within 10-feet tangent to the outer edges of Metropolitan's pipeline. Additionally, pipelines crossing Metropolitan's pipelines must be perpendicular and maintain a minimum 1-foot vertical clearance.
Parallel Pipeline	Metropolitan generally does not permit the installation of longitudinal pipelines along its rights-of-way. Within public streets, Metropolitan requests that all parallel pipelines be located a minimum of 10 feet from the outside edges of Metropolitan's pipelines. When 10-foot horizontal separation criteria cannot be met, special pipe construction (no joints) or secondary containment[3] are required.
Storm Drain Manhole	Permanent utility structures (e.g., manhole. catch basin, inlets) are not allowed within Metropolitan's rights-of-way. Within public streets, Metropolitan requests all structures parallel to its pipeline be located a minimum of 10 feet from the outside edges of its pipelines. When 10 foot horizontal separation criteria cannot be met, the structure must have secondary containment[4].

Notes:

[1] *Separation distances are measured from the outer edges of each pipe.*

[2] *Disinfected tertiary recycled water as defined* in Title 22, California Code of Regulations, Chapter 3 (*Water Recycling Criteria*), Section 60301.

[3] *Secondary Containment for Pipeline - Secondary containment consists of a continuous pipeline sleeve (no joints). Examples acceptable to Metropolitan include welded steel pipe with grout in annular space and cathodic protection (unless coated with non-conductive material) and High Density Polyethylene (HDPE) pipe with fusion-welded joints.*

[4] *Secondary Containment for Structures – Secondary containment consists of external HDPE liner or other approved method.*

Table 3: General Guidelines for Pipeline Separation[1] between Metropolitan's Pipeline and Recycled Water[2,4] Irrigations

Pressurized recycled irrigation mainlines	• Crossings - must be perpendicular and maintain a minimum 1-foot vertical clearance. Crossing pressurized recycled irrigation mainlines must be special pipe construction (no joints) or have secondary containment[3] within 10-feet tangent to the outer edges of Metropolitan's pipeline. • Longitudinal - must maintain a minimum 10-foot horizontal separation and route along the perimeter of Metropolitan's rights-of-way where possible.
Intermittently Energized Recycled Water Irrigation System Components	• Crossings - must be perpendicular and maintain a minimum 1-foot vertical clearance. Crossing irrigation laterals within 5-feet tangent to the outer edges of Metropolitan's pipeline must be special pipe construction (no joints) or have secondary containment[3]. • Longitudinal – must maintain a minimum 5-foot horizontal separation between all intermittently energized recycled water irrigation system components (e.g. irrigation lateral lines, control valves, rotors) and the outer edges of Metropolitan's pipeline. Longitudinal irrigation laterals within 5-feet tangent to the outer edges of Metropolitan's pipeline must be special pipe construction (no joints) or have secondary containment[3].
Irrigation Structures	Irrigation structures such as meters, pumps, control valves, etc. must be located outside of Metropolitan's rights-of-way.
Irrigation spray rotors near Metropolitan's aboveground facilities	Irrigation spray rotors must be located a minimum of 20-foot from any Metropolitan above ground structures with the spray direction away from these structures. These rotors should be routinely maintained and adjusted as necessary to ensure no over-spray into 20-foot clear zones.
Irrigations near open canals and aqueducts	Irrigation with recycled water near open canals and aqueducts will require a setback distance to be determined based on site-specific conditions. Runoff of recycled water must be contained within an approved use area and not impact Metropolitan facilities. Appropriate setbacks must also be in place to prevent overspray of recycled water impacting Metropolitan's facilities.

Notes:

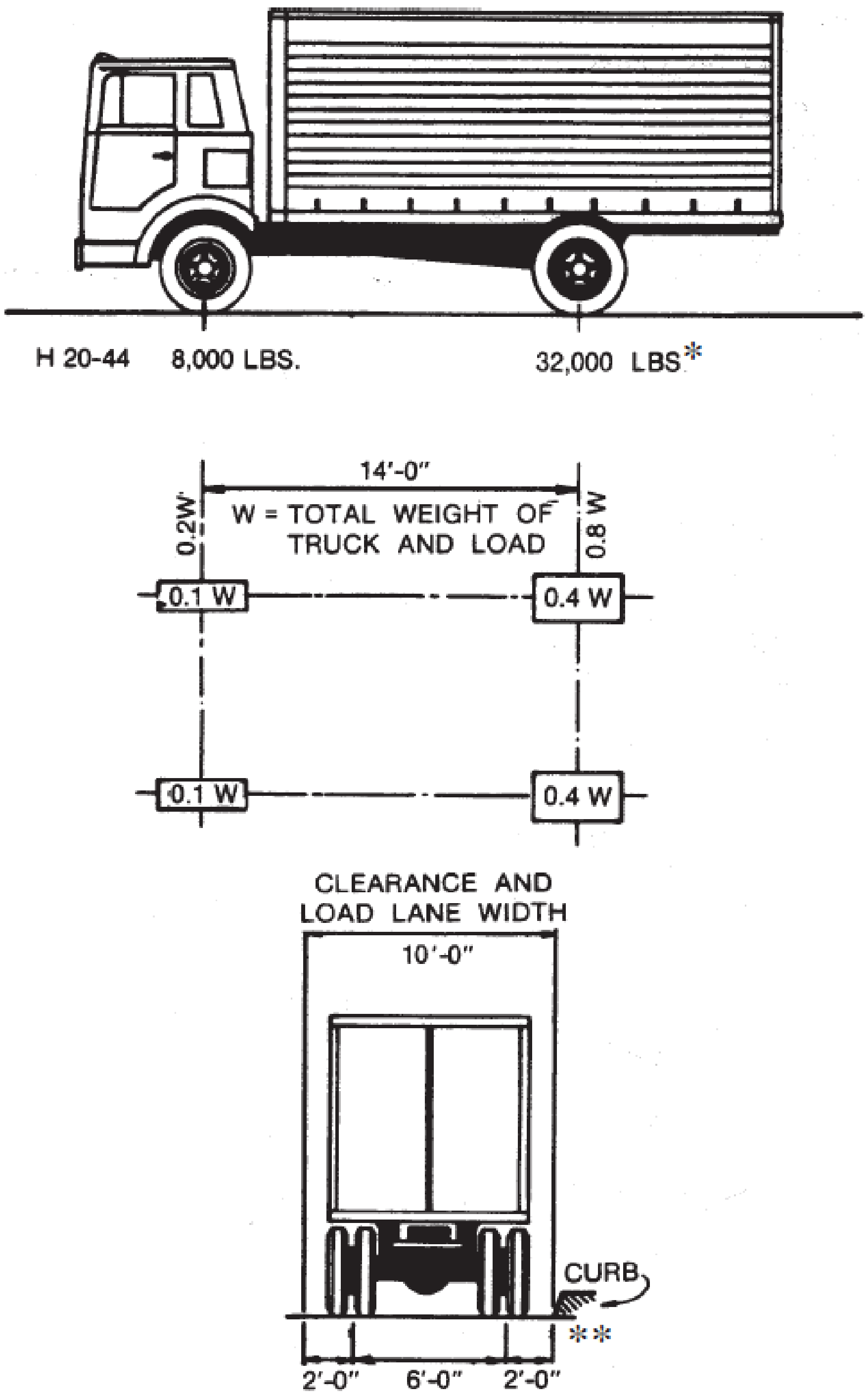
[1] *Separation distances are measured from the outer edges of each pipe.*

[2] *Requirements for recycled water irrigation apply to all levels of treatment of recycled water for non-potable uses.* Recycled water definitions are included in Title 22, California Code of Regulations, Chapter 3 (*Water Recycling Criteria*), Section 60301.

[3] *Secondary Containment for Pipeline - Secondary containment consists of a continuous pipeline sleeve (no joints). Examples acceptable to Metropolitan include welded steel pipe with grout in annular space and cathodic protection (unless coated with non-conductive material) and High Density Polyethylene (HDPE) pipe with fusion-welded joints.*

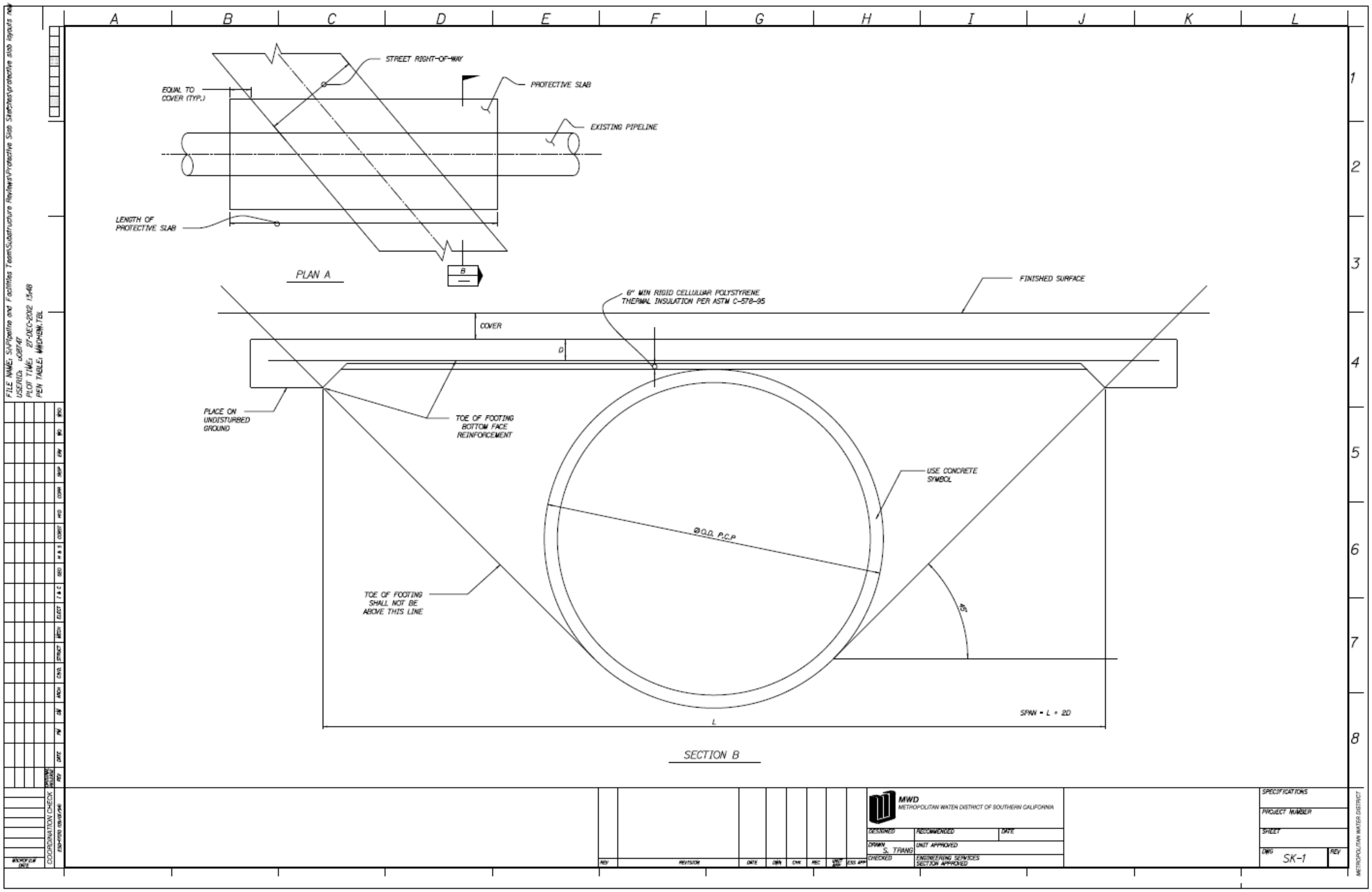
[4] *Irrigation with recycled water shall not be applied directly above Metropolitan's treated water pipelines.*

Figure 1: AASHTO H-20 Loading



Note: The H loadings consist of a two-axle truck or the corresponding lane loadings as illustrated above. The H loadings are designated "H" followed by a number indicating the gross weight in tons of the standard truck.

Figure 2: Drawing SK-1



Golden State Environmental Justice Alliance
Green Jobs & Clean Communities
P.O. Box 79222
Corona, CA 92877

July 16, 2021

VIA EMAIL

Veronica Hernandez, Senior Planner
City of Riverside
Community & Economic Development Department - Planning Division
3900 Main Street, 3rd Floor
Riverside, California 92522
vhernandez@riversideca.gov

SUBJECT: COMMENTS ON SYCAMORE HILLS DISTRIBUTION CENTER EIR (SCH NO. 2020079023)

To whom it may concern:

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the proposed Sycamore Hills Distribution Center EIR. Please accept and consider these comments on behalf of Golden State Environmental Justice Alliance. Also, Golden State Environmental Justice Alliance formally requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877.

1.0 Summary

The project proposes the development and operation of two warehouse/distribution buildings on the approximately 48 acre project site. Building A is proposed on Parcel 1 and will be 400,000 square feet in size, including 10,000 square feet of office area, 390,000 square feet of warehouse area, 88 dock doors, 394 passenger car parking spaces and 117 truck parking spaces. Building B is proposed on Parcel 2 and will be 203,100 square feet in size, including 10,000 square feet of office area, 193,100 square feet of warehouse area, 34 dock doors, 238 passenger car parking spaces and 45 truck parking spaces.

The project site contains an existing area of approximately 11.6 acres legally designated as "Restricted Property" which land locks proposed Parcel 1. The Restricted Property area supports a jurisdictional drainage and associated riparian habitat and was required as a condition of the Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers for construction of the Grove Community Church at an off-site location, approximately one mile southwest. The Restricted Property is intended for preservation in a natural condition. The project proposes to remove 0.81 acres of the Restricted Property to create a driveway connecting Parcel 1/Building A to Alessandro Boulevard. 1.44 acres of land elsewhere on the project site will be incorporated into Parcel A, for a net gain of 0.63 acre of new Restricted Property. Parcel A and B are proposed to have a total of 12.23 acres of Restricted Property.

Proposed Parcel C totaling 1.18 acres is proposed to be developed with a trailhead parking lot to serve the Sycamore Canyon Wilderness Park and subsequently dedicated to the City. Improvements include a parking lot, sidewalk, shade structure, bike rack, drinking fountain, fencing, and a Fire Department access gate.

3.0 Project Description

The project site has a General Plan Land Use designation of Business/Office Park (B/OP), a Zoning designation of Business/Manufacturing Park - Specific Plan Overlay (BMP-SP), and an Industrial (I) designation within the Sycamore Canyon Business Park Specific Plan. The B/OP General Plan designation provides for "light industrial and small warehouse uses (up to 10,000 square feet per site)[1]." A conflict exists between the quantity of warehousing allowed by the site's General Plan designation and the quantity allowed by the Zoning designation and Specific Plan. A General Plan Amendment to the Industrial Land Use designation which provides for larger warehousing/distribution uses is required for the proposed project to proceed. This information is not disclosed or analyzed anywhere throughout the EIR. The Land Use and Planning section and the Project Description do not provide a description of the B/OP Land Use designation. A revised EIR must be prepared which includes this information and provides an

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[1] Riverside General Plan 2025 - Land Use and Urban Design Element https://riversideca.gov/cedd/sites/riversideca.gov.cedd/files/pdf/planning/general-plan/04_Land_Use_and_Urban_Design_Element_with%20maps%20COMPLETE%20AUGUST%202019.pdf

accurate, adequate analysis of the proposed project's inconsistency with the existing General Plan Land Use designation.

The EIR provides a list of the required entitlements and discretionary actions necessary for the proposed project to proceed. The EIR states that a Minor Conditional Use Permit is required pursuant to Riverside Municipal Code Section 19.150.020 - Base Zones Permitted Land Uses[2] for Business and Manufacturing Park (BMP) Zone. However, Section 19.150.020 notes that a Conditional Use Permit is required for any warehouse/distribution facility in the BMP Zone that exceeds 100,000 square feet (sf). The project proposes 603,100 sf of warehousing/distribution facilities; therefore, a CUP is required instead of a Minor CUP. The EIR is inadequate as an informational document and does not provide an accurate list or analysis of required discretionary actions (CEQA § 15121).

Further, the EIR does not describe the mechanism or legal instrument in which the proposed modifications to the existing 11.6 acre Restricted Property will be completed. The proposed project cannot proceed without approval of the modifications to the Restricted Property and the mechanism for completing this must be included as part of a revised EIR.

It is also notable that the EIR does not include a floor plan for either of the buildings. The basic components of a Planning Application include a site plan, floor plan, conceptual grading plan, and elevations. Additionally, the site plan provided in Figure 3.0-9 and the elevations of Figures 3.0-14A/B do not provide any detailed information such as parcel size, site coverage, or building height. The EIR has excluded the proposed floor plans and a detailed site plan/elevations from public review, which does not comply with CEQA's requirements for adequate informational documents and meaningful disclosure (CEQA § 15121 and 21003(b)). An EIR must be prepared which includes these informational items.

5.2 Air Quality

The CalEEMod output sheets do not accurately reflect the project as proposed in the EIR. The CalEEMod analysis does not include any surface parking spaces. Surface parking lots are

[2] Riverside Municipal Code Section 19.150.020 https://library.municode.com/ca/riverside/codes/code_of_ordinances?nodeId=PTIICOOR_TIT19ZO_ARTVBAZOREUSDEPR_CH19.150BAZOPELAUS_19.150.020PELAUS

defined as individual land uses in the CalEEEMod User Guide[3] and must be entered into the analysis. Further, the Air Quality modeling does not analyze the whole of the project. The CalEEMod analysis excludes the trailhead parking lot, park, and associated improvements on Parcel C which will be dedicated to the City. The EIR must be revised which includes these items in order to accurately and adequately analyze the impacts of the proposed project.

The CalEEMod output sheets have excluded any hauling trips for analysis. The Project Description states that an "estimated 40,000 cubic yards of excess material will be moved from Parcel 1 to Parcel 2" in order for the onsite grading to balance. The EIR notes that "this excess material will be transported via the existing dirt road between the parcels (crossing through Parcel A), which will be utilized temporarily during construction and restored post-construction." Figure 3.0-3 depicts the eastern half of Parcel A as existing restricted property. It is not feasible or appropriate for haul trucks to traverse the existing or proposed restricted property of Parcel A to transport soil/material between Parcel 1 and 2. It must also be noted that the California Department of Fish and Wildlife also expressed similar concerns about construction of an access road under lands conserved under a restricted covenant in written comments responding to the NOP.

Given a standard 10 cubic yard haul truck capacity, transporting 40,000 cubic yards of soil/material would require 400 haul truck trips. The EIR must be revised to include an enforceable mitigation measure requiring all vehicles, including haul trucks, to utilize public roads for all purposes and prohibit any activity related to project construction/operation on the existing or proposed restricted property. The revised EIR must also include the required 400 haul truck trips in all applicable sections of environmental analysis.

Section 7.35.010(B)(5) of the Riverside Municipal Code (RMC) prohibits construction activity between the hours of 7:00 P.M. and 7:00 A.M. Monday through Friday, and between 5:00 P.M. and 8:00 A.M. on Saturday. All such activities are also prohibited on Sundays. Thus, the legal hours of construction in the City of Riverside are 7:00 A.M. - 7:00 P.M., Monday - Friday and 8:00 A.M. - 5:00 P.M. on Saturday. The EIR does not provide a "worst-case scenario" analysis of construction equipment emitting pollutants for the legal 12 hours per weekday plus 9 hours on Saturday. It is legal for construction to occur for much longer hours and an additional day (6 days per week including Saturday) than modeled in the Air Quality Analysis. The Air Quality modeling must be revised to account for these legally possible longer construction days and increased number of construction days. If shorter hours of construction are proposed by the

[3] CalEEMod User Guide http://www.aqmd.gov/docs/default-source/caleemod/user's-guide---october-2017.pdf?sfvrsn=6

project, this must be reflected in the EIR analysis and included as an enforceable mitigation measure with field verification by an enforcement entity of the lead agency (CEQA § 21081.6 (b)).

The EIR does not include for analysis relevant environmental justice issues in reviewing potential impacts, including cumulative impacts from the proposed project. This is especially significant as the surrounding community is highly burdened by pollution. According to CalEnviroScreen 3.0, CalEPA's screening tool that ranks each census tract in the state for pollution and socioeconomic vulnerability, the proposed project's census tract (6065042217) ranks worse than 56% of the rest of the state overall. The surrounding community, including sensitive receptors such as the single family residences to the south, bears the impact of multiple sources of pollution and is more polluted than average on every pollution indicator measured by CalEnviroScreen. For example, the project census tract ranks in the 98th percentile for ozone burden and the 84th percentile for PM 2.5 burden, which is typically attributed to heavy truck activity in the area.

Further, the project's census tract is a diverse community including 22% Hispanic and 8% African-American residents, which are especially vulnerable to the impacts of pollution. Additionally, the surrounding community has a higher proportion of babies born with low birth weights than 59% of the state, which makes those children more vulnerable to asthma and other health issues. The community ranks in the 57th percentile for asthma and 38th percentile for incidence of cardiovascular disease, which are exacerbated by Air Quality and Greenhouse Gas impacts.

Exhibit 4-1: Project (Passenger Car) Trip Distribution of Appendix L (Traffic and VMT Analysis) depicts 20% of passenger cars exiting the project site traveling westbound on Alessandro Blvd. The HRA's Exhibit 4-B: Receptor Locations only models project traffic traveling eastbound on Alessandro Blvd. Excluding the westbound Alessandro Blvd. traffic from modeling skews impacts downwards and does not equitably analyze all sensitive receptors, such as the residents along westbound Alessandro Blvd. The EIR must be revised with an HRA that models the 20% of project trips traveling westbound on Alessandro Blvd. to adequately and accurately analyze all potentially significant impacts of the proposed project.

The HRA is misleading to the public and decision makers as the text appears to analyze each residential receptor for their respective 9- and 30- year exposure timeline. However, Appendix 2.2 Risk Calculations within Appendix C notes that modeling for all residential receptor age bins, workers, and schoolchild were averaged over a 70 year time period. OEHHA's 2015 Guidance

Manual for Preparation of Health Risk Assessments[4] state that, "together, the 9-, 30-, and 70-year cancer risk calculations provide a useful presentation of cancer risk and the relationship to duration of residency and, thus, exposure to a facility's emissions." The EIR must be revised to include modeling scenarios for the 9-, 30-, and 70-year cancer risk calculations in order to provide a useful presentation of cancer risk in accordance with the guidelines utilized for modeling. Additionally, the 16-70 age bin for sensitive receptors must be modeled as well.

5.3 Biological Resources

According to the Burrowing Owl Focused Survey Report within Appendix D - Biological Resources, the focused surveys were conducted on April 24, May 7, May 21, and June 5, 2020. The report notes that "the majority of the site is densely vegetated following high levels of late spring precipitation, resulting in minimal open areas and limited line-of-sight opportunities." However, the report does not indicate whether rain had occurred within five days of each survey. The Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area[5] state that "absence of burrowing owl sign cannot be used to confirm absence of the species if the focused burrow survey is conducted within 5 days of rain." The EIR must be revised to indicate whether rain was present within 5 days of each survey.

Further, the report notes that "several small mammal burrows that have the potential to provide suitable burrowing owl nesting habitat (>4 inches in diameter) were observed scattered throughout the project site during the surveys." The Burrowing Owl Survey Instructions require that the "location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed should be recorded and mapped, including GPS coordinates." The EIR does not include maps or photographs of this data and must be revised to include this information in order to provide an accurate and adequate analysis in compliance with the Burrowing Owl Survey Instructions.

5.5 Energy

The State of California lists two approved compliance modeling softwares[6] for non-residential buildings: CBECC-Com and EnergyPro. CalEEMod is not listed as an approved software. The

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[4] OEHHA 2015 Guidance Manual for Preparation of Health Risk Assessments https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

[5] https://www.wrc-rca.org/species/survey_protocols/burrowing_owl_survey_instructions.pdf

[6] 2019 Building Energy Efficiency Standards Approved Computer Compliance Programs, California Energy Commission. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency-2

modeling provided in the EIR does not comply with the 2019 Building Energy Efficiency Standards and under reports the project's potentially significant GHG and Energy impacts to the public and decision makers. Since the EIR did not accurately or adequately model the Energy impacts in compliance with Title 24, a finding of significance must be made. A revised EIR with modeling in one of the two approved software types must be circulated for public review in order to adequately analyze the project's potentially significant environmental impacts. This is vital as the EIR utilizes the CalEEMod defaults for construction equipment/operational sources, which is clearly not one of the approved softwares.

5.7 Greenhouse Gas Emissions

There are discrepancies within the CalEEMod Output Sheets regarding CO2 emissions. The passenger car summer analysis determined there will be 9,581 MTCO2e during construction and 8,074 MTCO2e during project operations; the winter passenger car analysis determined there will be 9,256 MTCO2e during construction and 7,582 MTCO2e during project operations. The heavy trucks summer analysis determined there will be 9,581 MTCO2e during construction and 26,653 MTCO2e during project operations; the winter heavy trucks analysis determined there will be 9,256 MTCO2e during construction and 26,514 MTCO2e during project operations.

However, the annual passenger car analysis reduces these emissions to 638 MTCO2e during construction and 3,047 MTCO2e during project operations. The heavy trucks annual analysis reduces these emissions to 638 MTCO2e during construction and 6,162 MTCO2e during project operations. The annual analysis has reduced the heavy trucks seasonal scenarios by approximately 75% to achieve the annual operational MTCO2e. There is no explanation for the reductions given or the manner in which the reductions were achieved. These reductions serve to skew emissions downwards, specifically below the SCAQMD 10,000 MTCO2e significance threshold for industrial projects. Additionally, modeling errors such as those noted in the Energy, Air Quality, and Transportation discussions must be corrected in order to adequately analyze the project's GHG emissions. The EIR must be revised to present this for analysis and include a finding of significance.

5.8 Hazards and Hazardous Materials

The proposed project site is within March Air Reserve Base (MARB)/Inland Port Airport Compatibility Zone C1. The EIR states that "the FAA staff has reviewed project information under the provisions of Title 14 of the Code of Federal Regulations, part 77 for Buildings A and

B and issued determinations of No Hazard to Air Navigation based on the following building heights: Building A, with 1596 feet site elevation (SE), 45 feet above ground level (AGL) and 1641 feet above mean sea level (AMSL); and Building B, with 1609 feet SE, 45 feet AGL, and 1654 AMSL. Thus, potential impacts would be less than significant." However, the EIR does not include the FAA determination reports as part of the EIR. CEQA § 15150 (f) states that incorporation by reference is most appropriate for including long, descriptive, or technical materials that provide general background but do not contribute directly to the analysis of the problem at hand. The FAA determination reports contribute directly to the analysis of the problem at hand. Not including the FAA determination reports as an attachment for public review is in violation of CEQA § 15150 (f). The EIR must be revised and recirculated for public review including the FAA determination reports. This is especially vital as the building elevations provided in Figures 3.0-14A and B do not include pertinent information such as the overall height of each building which would assist the public and decision makers in determining compliance with these requirements.

5.10 Land Use and Planning

Appendix B and the EIR list relevant Policies for consistency analysis from the the Riverside General Plan. However, neither analysis includes Policies AQ-1.1 and AQ-1.2 related to Environmental Justice:

Policy AQ-1.1: Ensure that all land use decisions, including enforcement actions, are made in an equitable fashion to protect residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status or geographic location, from the health effects of air pollution.

Policy AQ-1.2: Consider potential environmental justice issues in reviewing impacts (including cumulative impacts for each project proposed).

The EIR must be revised to include analysis of environmental justice issues in reviewing potential impacts, including cumulative impacts from the proposed project. This is especially significant as the surrounding community is highly burdened by pollution, as noted in the Air Quality discussion above.

Further, the Transportation analysis concludes the project will result in an LOS deficiency at Sycamore Canyon Boulevard and Alessandro Boulevard, which the EIR has not considered as a Land Use and Planning impact in conflict with the City's General Plan or other guidelines. The

EIR must be revised to include an analysis of the project's impact in relation to the following General Plan policies:

Policy CCM-2.3: Maintain LOS D or better on Arterial Streets wherever possible. At key locations, such as City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges, allow LOS E at peak hours as the acceptable standard on a case-by-case basis.

Policy CCM-2.4: Minimize the occurrence of streets operating at LOS F by building out the planned street network and by integrating land use and transportation in accordance with the General Plan principles.

The project site has a General Plan Land Use designation of Business/Office Park (B/OP), a Zoning designation of Business/Manufacturing Park - Specific Plan Overlay (BMP-SP), and an Industrial (I) designation within the Sycamore Canyon Business Park Specific Plan. The B/OP General Plan designation provides for "light industrial and small warehouse uses (up to 10,000 square feet per site)[7]." A conflict exists between the quantity of warehousing allowed by the site's General Plan designation and the quantity allowed by the Zoning designation and Specific Plan. A General Plan Amendment to the Industrial Land Use designation which provides for larger warehousing/distribution uses is required for the proposed project to proceed. This information is not disclosed or analyzed anywhere throughout the EIR. The Land Use and Planning section does not provide a description of the B/OP Land Use designation. A revised EIR must be prepared which includes this information and provides an accurate, adequate analysis of the proposed project's inconsistency with the existing General Plan Land Use designation.

The EIR provides a list of the required entitlements and discretionary actions necessary for the proposed project to proceed. The EIR states that a Minor Conditional Use Permit is required pursuant to Riverside Municipal Code Section 19.150.020 - Base Zones Permitted Land Uses[8] for Business and Manufacturing Park (BMP) Zone. However, Section 19.150.020 notes that a

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[7] Riverside General Plan 2025 - Land Use and Urban Design Element https://riversideca.gov/cedd/sites/riversideca.gov.cedd/files/pdf/planning/general-plan/04_Land_Use_and_Urban_Design_Element_with%20maps%20COMPLETE%20AUGUST%202019.pdf

[8] Riverside Municipal Code Section 19.150.020 https://library.municode.com/ca/riverside/codes/code_of_ordinances?nodeId=PTIICOOR_TIT19ZO_ARTVBAZOREUSDEPR_CH19.150BAZOPELAUS_19.150.020PELAUS

Conditional Use Permit is required for any warehouse/distribution facility in the BMP Zone that exceeds 100,000 square feet (sf). The project proposes 603,100 sf of warehousing/distribution facilities; therefore, a CUP is required instead of a Minor CUP. The EIR is inadequate as an informational document and does not provide an accurate list or analysis of required discretionary actions (CEQA § 15121).

Additionally, the EIR has not provided any consistency analysis with the goals SCAG's 2020-2045 Connect SoCal RTP/SCS[9]. Due to errors in modeling, such as excluding haul truck trips and other issues as noted in the Air Quality/Greenhouse Gas/Energy discussions above and the project's significant and unavoidable VMT impacts, the proposed project has signifiant potential for inconsistency with Goal 5 to reduce greenhouse gas emissions and improve air quality, Goal 6 to support healthy and equitable communities, and Goal 7 to adapt to a changing climate. Also as noted in the GHG discussion, the summer/winter GHG analyses exceed the GHG emissions thresholds, resulting in a significant impact. The EIR must be revised to include accurate Air Quality/HRA, Energy, and GHG modeling and discussion of significant and unavoidable Transportation/VMT impacts in order to accurately analyze potential consistency or inconsistency with SCAG's 2020-2045 RTP/SCS document.

5.12 Transportation

The study area for the EIR is arbitrary and capricious in that it does not include for analysis all potentially significant impacts on the transportation facilities providing access to the site. The EIR only analyzes eight intersections, two of which are proposed future driveways for the site. The EIR must be revised and circulated for public review to include analysis of the following transportation facilities providing direct access to the project site:

Intersections
Alessandro Blvd. at Mission Grove Pkwy.
Alessandro Blvd. at Canyon Crest Dr.
Alessandro Blvd. at Chicago Ave./Arlington Ave.
Alessandro Blvd./Central Ave. at Victoria Ave.

Freeway Merge/Diverge
I-215 at SR-60
I-215 at SR-91

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[9] SCAG 2020-2045 Connect SoCal RTP/SCS https://scag.ca.gov/read-plan-adopted-final-plan

I-215 at I-10
I-215 at SR-210
I-215 at I-15

Freeway On/Off Ramps
SR-91 at Central Ave.
SR-91 at Arlington Ave.
I-215 at Cactus Ave.
I-215 at Eucalyptus Ave./Eastridge Ave.

This is especially vital for analysis since Exhibit 4-1 Project (Passenger Car) Trip Distribution within Appendix L - Traffic and VMT Analysis depicts 20% of passenger car trips heading westbound on Alessandro Blvd. towards Mission Grove Pkwy and 5% of passenger car trips heading southbound on Sycamore Canyon Blvd./Meridian Pkwy. Additionally, the I-215 provides direct access to the project site from the Southern California Logistics Airport. The project objectives also include developing and operating warehouse buildings that "are in close proximity to March Inland Port, State Route 60/Interstate 215, and Interstate 10 to support the distribution of goods throughout the region." A revised EIR must be prepared that includes analysis of all transportation facilities providing direct access to the project site.

The EIR chooses to model the project as a high-cube transload short-term warehouse because the ITE defines this type of warehouse as the lowest trip generation per 1,000 sf of all industrial land uses (0.10 trips per 1,000 sf)[10]. The ITE 2020 10th Edition Manual Supplement also reduced the total percentage of truck trips for high-cube transload short-term warehouses to 16% of all trips generated by the project[11]. Modeling the proposed project as high-cube transload short-term warehouse serves to skew analysis downward and present unduly low emissions estimates and VMT. The Project Description includes operational and characteristic information about the project that indicate it is likely to be used as a fulfillment center based on SCAQMD's High-Cube Warehouse Vehicle Trip Generation Analysis[12]. The proposed project encompasses more characteristics of a fulfillment center warehouse type which generates higher emissions and

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[10] Institute of Transportation Engineers Common Trip Generation Rates (PM Peak Hour) https://www.troutdaleoregon.gov/sites/default/files/fileattachments/public_works/page/966/ite_land_use_list_10th_edition.pdf

[11] ITE 10th Edition Manual Supplement https://www.nxtbook.com/ygsreprints/ITE/ITE_March2020/index.php?startid=14

[12] SCAQMD High-Cube Warehouse Vehicle Trip Generation Analysis https://www.ite.org/pub/?id=a3e6679a%2De3a8%2Dbf38%2D7f29%2D2961becdd498

VMT, such as high levels of on-site automation and logistics management, handling products prior to their distribution to retail locations or other warehouses, and interior ceiling heights of 40 feet in order to accommodate mezzanines. The EIR must be revised to model the project accurately as ITE Land Use 155 High-cube Fulfillment Center Warehouse in accordance with planned operations as detailed in the Project Description in order for the EIR to be a reliable informational document.

The EIR concludes that the LOS deficiency at Sycamore Canyon Boulevard and Alessandro Boulevard is unavoidable but not significant as a traffic impact. However, it has not been considered as a Land Use and Planning impact in conflict with the City's General Plan or other guidelines. The EIR must be revised to include an analysis of the project's impact in relation to the following General Plan policies:

Policy CCM-2.3: Maintain LOS D or better on Arterial Streets wherever possible. At key locations, such as City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges, allow LOS E at peak hours as the acceptable standard on a case-by-case basis.

Policy CCM-2.4: Minimize the occurrence of streets operating at LOS F by building out the planned street network and by integrating land use and transportation in accordance with the General Plan principles.

6.0 Other CEQA Topics

6.2 Consistency with Regional Plans

The EIR concludes that the project is consistent with the General Plan Land use designation of Business/Office Park (B/OP). However, as noted above, there is no discussion or analysis regarding the B/OP designation. The B/OP General Plan designation provides for "light industrial and small warehouse uses (up to 10,000 square feet per site)[13]." A conflict exists between the quantity of warehousing allowed by the site's General Plan designation and the quantity allowed by the Zoning designation and Specific Plan. A General Plan Amendment to the Industrial Land Use designation which provides for larger warehousing/distribution uses is required for the proposed project to proceed. This information is not disclosed or analyzed

[13] Riverside General Plan 2025 - Land Use and Urban Design Element https://riversideca.gov/cedd/sites/riversideca.gov.cedd/files/pdf/planning/general-plan/04_Land_Use_and_Urban_Design_Element_with%20maps%20COMPLETE%20AUGUST%202019.pdf

anywhere throughout the EIR. The Land Use and Planning section does not provide a description of the B/OP Land Use designation. A revised EIR must be prepared which includes this information and provides an accurate, adequate analysis of the proposed project's inconsistency with the existing General Plan Land Use designation.

Additionally, the EIR concludes that the project is consistent with SCAG's Connect SoCal and refers to discussion in Section 5.12 - Transportation for analysis. However, Section 5.12 does not include VMT discussion for analysis in relation to consistency analysis with Connect SoCal. The Transportation analysis concludes the project will have a significant and unavoidable impact regarding VMT impacts. The proposed project has signifiant potential for inconsistency with Connect SoCal's Goal 5 to reduce greenhouse gas emissions and improve air quality, Goal 6 to support healthy and equitable communities, and Goal 7 to adapt to a changing climate as a result of the VMT impacts. The EIR must be revised to include this analysis for discussion regarding Connect SoCal. Additionally, no other analysis regarding consistency with Connect SoCal is given throughout the EIR other than in the Transportation Analysis. The revised EIR must include a consistency analysis with Connect SoCal for all portions of environmental analysis.

6.4 Growth Inducing Impacts

The EIR utilizes misleading and uncertain language in concluding that the project will not have growth inducing population impacts. The EIR states that "the employment opportunities anticipated to be generated by the Project are *relatively minor* and within the Southern California Association of Governments (SCAG) population, housing, and employment forecasts." As noted in the Population and Housing discussion below, SCAG's Connect SoCal Demographics and Growth Forecast[14] notes that the City will add 43,300 jobs between 2016 - 2045. The EIR's calculation of 586 employees is actually 1.3% of the City's employment growth from 2016 - 2045. Utilizing SCAG's Employment Density Study[15] calculation of 1,046 employees, the project represents 2.4% of the City's employment growth from 2016 - 2045. A single project accounting for more than 1% of the projected employment growth over 29 years represents a significant amount of growth. The EIR must be revised to includes this analysis, and also provide a cumulative analysis discussion of projects approved since 2016 and projects "in the pipeline" to determine if the project will exceed the SCAG's employment growth forecast for the

[14] SCAG Connect SoCal Demographics and Growth Forecast adopted September 3, 2020 https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579

[15] SCAG Employment Density Study http://www.mwcog.org/file.aspx?A=QTTlTR24POOOUIw5mPNzK8F4d8djJe4LF9Exj6lXOU%3D

City. Additionally, the revised EIR must also provide demographic and geographic information on the location of qualified workers to fill these positions in order to provide an accurate environmental analysis.

7.0 Environmental Effects Found Not Significant

7.1.1 Agriculture and Forestry Resources

The California Important Farmland Finder identifies the site as Farmland of Local Importance. The EIR excludes this information for analysis. A revised EIR must be prepared which discloses and analyzes this information.

7.1.7 Population and Housing

The EIR utilizes uncertain and misleading language which does not provide any meaningful analysis of the project's construction employment generation. For example, the EIR concludes that, "given the availability of labor in the Riverside County and San Bernardino County region, and the southern California region as a whole, it is reasonable to assume that the construction of the Project will be completed by existing companies already doing business in the area with employees already residing in the area. Thus, construction-related growth inducement would not result from implementation of the Project." In order to comply with CEQA's requirements for meaningful disclosure, the EIR must provide an accurate estimate of construction employees generated by the proposed project. It must also provide demographic and geographic information on the location of qualified workers to fill these positions. Additionally, an estimate of the number of workers relocating to the City as a result of the project should be provided utilizing existing housing vacancy rates in the City. Relying on the entire labor force of the SCAG region to fill the project's construction jobs will increase VMT and emissions during all phases of construction and each portion of the EIR must be revised to account for longer construction worker trip distances.

The EIR provides a calculation of the employees generated by the proposed project based on the County of Riverside's General Plan Appendix E-2: Socioeconomic Build-Out Assumptions and Methodology which includes a square foot per employee factor of 1,030 square feet per employee for Light Industrial land uses. Based on this factor, the EIR calculates the project will generate 586 employees. However, the EIR excludes the proposed office areas from the employment calculation. The project description states that each of the proposed buildings will include 10,000 sf of office space for a project total of 20,000 sf of office. The County's

Appendix E-2 includes a square foot per employee factor of 300 square feet per employee for Office land uses.

Applying these ratios results in the following calculation:

Office: 20,000 sf / 300 = 21

Warehouse: 583,100 sf / 1,030 = 567

Total: 634 employees

It must also be noted that utilizing the County of Riverside's General Plan as the methodology for employment calculation is not an appropriate source. The Introduction section of County's General Plan[16] states that "The General Plan covers the entire unincorporated portion of the County of Riverside." It is not intended to be applied to the incorporated cities within the County.

SCAG's Employment Density Study[17] provides a technical analysis and average of county-wide parcels within the SCAG region for ten land use categories. The SCAG study is an appropriate source for employment calculation as it is meant to be applied as county-wide average, unlike the Riverside County General Plan which is applicable only to the unincorporated areas of the county. The SCAG study includes the following applicable employment generation rates for Riverside County:

Warehouse: 1 employee per 581 square feet
Office: 1 employee per 481 square feet

Applying these ratios results in the following calculation:

Warehouse: 583,100 sf / 581 = 1,004

Office: 20,000 sf / 481 sf = 42

Total: 1,046 employees

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[16] County of Riverside General Plan, Introduction. https://planning.rctlma.org/Portals/14/genplan/general_Plan_2017/elements/OCT17/Ch01_Intro_120815.pdf?ver=2017-10-11-102103-380

[17] SCAG Employment Density Study http://www.mwcog.org/file.aspx?A=QTTlTR24POOOUIw5mPNzK8F4d8djdJe4LF9Exj6lXOU%3D

Utilizing SCAG's Employment Density Study ratios, the proposed project will generate 1,046 employees. The EIR concludes that its calculation of 586 employees generated by the project represents 0.3 percent of the expected opportunities within the City by 2045. SCAG's Connect SoCal Demographics and Growth Forecast[18] notes that the City will add 43,300 jobs between 2016 - 2045. The EIR's calculation of 586 employees is actually 1.3% of the City's employment growth from 2016 - 2045. Utilizing SCAG's Employment Density Study calculation of 1,046 employees, the project represents 2.4% of the City's employment growth from 2016 - 2045. A single project accounting for more than 1% of the projected employment growth over 29 years represents a significant amount of growth. The EIR must be revised to includes this analysis, and also provide a cumulative analysis discussion of projects approved since 2016 and projects "in the pipeline" to determine if the project will exceed the SCAG's employment growth forecast for the City. Additionally, the revised EIR must also provide demographic and geographic information on the location of qualified workers to fill these positions in order to provide an accurate environmental analysis.

Conclusion

For the foregoing reasons, GSEJA believes the EIR is flawed and a revised EIR must be prepared for the proposed project and circulated for public review. Golden State Environmental Justice Alliance requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877.

Sincerely,

Board of Directors
Golden State Environmental Justice Alliance

[18] SCAG Connect SoCal Demographics and Growth Forecast adopted September 3, 2020 https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579

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July 21, 2021

Gary Ho
Blum Collins LLP
707 Wilshire Blvd, Ste. 4880
Los Angeles, CA 90017

Subject: Comments on the Sycamore Hills Distribution Center Project (SCH No. 2020079023)

Dear Mr. Ho,

We have reviewed the May 2021 Draft Environmental Impact Report ("DEIR") for the Sycamore Hills Distribution Center Project ("Project") located in the City of Riverside ("City"). The Project proposes to construct two warehouse buildings totaling 603,100-SF, with Building A consisting of 10,000-SF of office space, 390,000-SF of unrefrigerated warehouse space, 388 parking spaces and 110 trailer stalls; and Building B consisting of 10,000-SF of office space, 193,100-SF of unrefrigerated warehouse space, 235 parking spaces, and 45 trailer stalls; as well as a 1.18-acre trailhead parking lot, on the 12.23-acre Project site.

Our review concludes that the DEIR fails to adequately evaluate the Project's air quality, health risk, and greenhouse gas impacts. As a result, emissions and health risk impacts associated with construction and operation of the proposed Project are underestimated and inadequately addressed. An updated DEIR should be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the project may have on the surrounding environment.

Air Quality

Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR's air quality analysis relies on emissions calculated with CalEEMod.2016.3.2 (Appendix C, p. 21).[1] CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with

[1] CAPCOA (November 2017) CalEEMod User's Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act ("CEQA") requires that such changes be justified by substantial evidence. Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters are utilized in calculating the Project's air pollutant emissions and make known which default values are changed as well as provide justification for the values selected.

When reviewing the Project's CalEEMod output files, provided in the Air Quality Analysis, Health Risk Assessment, Construction Health Risk Assessment Memorandum ("AQ & HRA Memo") as Appendix C to the DEIR, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions may be underestimated.

Incorrect Land Use Type

According to the DEIR, the project proposes to construct two warehouses, each with 10,000-SF of office space (p. 3.0-21 – 3.0.22). As such, the model should have included 20,000-SF of "General Office Building" and 583,100-SF of "Unrefrigerated Warehouse-No Rail." However, review of the CalEEMod output files demonstrate that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include all 603,100-SF as "Unrefrigerated Warehouse-No Rail" (see excerpt below) (Appendix C, pp. 46, 79, 112, 139, 166, 193).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	603.10	1000sqft	16.00	603,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	5.00	Acre	5.00	217,800.00	0

As you can see in the excerpt above, the models fail to distinguish between the unrefrigerated warehouse and office land uses. This inconsistency presents an issue, as CalEEMod includes 63 different land use types that are each assigned a distinctive set of energy usage emission factors.[2] Furthermore, each land use type includes a specific trip rate that CalEEMod uses to calculate mobile-source emissions.[3] Thus, by failing to include the proposed office space, the models may underestimate the Project's construction and operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Reductions to CH_4, CO_2, and N_2O Intensity Factors

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include manual reductions to the default CH_4, CO_2, and N_2O intensity factors (see excerpt below) (Appendix C, pp. 48-49, 81-82, 114-115, 141-142, 168-169, 195-196).

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[2] "CalEEMod User's Guide, Appendix D." CAPCOA, September 2016, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/05_appendix-d2016-3-1.pdf?sfvrsn=2.

[3] CalEEMod User's Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/01_user-39-s-guide2016-3-1.pdf?sfvrsn=2, p. 14.

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023
tblProjectCharacteristics	CO2IntensityFactor	1325.65	1051.61
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005

As you can see in the excerpt above, the CH_4, CO_2, and N_2O intensity factors were reduced by approximately 21%, 21%, and 17%, respectively. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[4] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "RPS – 33% goal by 2020, 18.4% accounted for in CalEEMod" (Appendix C, pp. 47, 80, 113, 140, 167, 194). Furthermore, regarding the Renewable Portfolio Standard ("RPS"), the DEIR states:

> "The Project would be served by Riverside Public Utilities, which has achieved 36 percent renewables as of 2017. The Project's energy related GHG emissions would decrease as Riverside Public Utilities increases its renewables procurement beyond 2020 towards the 2030 goal of 50 percent" (p. 5.5-25, Table 5.5-15).

However, these justifications fail to substantiate the models' changes for four reasons.

First, the DEIR and AQ & HRA Memo fail to provide a source for the claim that the utility provider "has achieved 36 percent renewables as of 2017" (p. 5.5-25, Table 5.5-15). Without a source to corroborate this claim, we are unable to substantiate the revised CH_4, CO_2, and N_2O intensity factors.

Second, the justification provided in the "User Entered Comments & Non-Default Data" table states that the model includes an 18.4% reduction; however, review of the modeling demonstrates that the CH_4, CO_2, and N_2O intensity factors were reduced by approximately 21%, 21%, and 17%, respectively.

Third, even if the utility provider *did* achieve 36% renewable energy, this does not inherently result in a 36% reduction from the 2016 CalEEMod default values. Without a justification explaining how a power mix including 36% renewable energy correlates in 21%, 21%, and 17% reductions from 2016 values, we are unable to verify the changes.

Finally, simply stating that the Project's "emissions would decrease" as the utility provider "increases its renewables procurement beyond 2020 towards the 2030 goal of 50 percent" does not offer substantial evidence to justify the reductions included in the models.

These unsubstantiated reductions present an issue, as CalEEMod uses the CH_4, CO_2, and N_2O intensity factors to calculate the Project's GHG emissions associated with electricity use.[5] Thus, by including unsubstantiated reductions to the default CH_4, CO_2, and N_2O intensity factors, the models may underestimate the Project's GHG emissions and should not be relied upon to determine Project significance.

[4] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[5] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.caleemod.com/, p. 17.

Underestimated Parking Land Use Size

According to the DEIR, the proposed Project includes 388 parking spaces and 110 trailer stalls for Building A, 235 parking spaces and 45 trailer stalls for Building B, and a 1.18-acre trailhead parking lot (p. 3.0-19, Table 3.0-2; p. 3.0-22, Table 3.0-3; p. 3.0-23, Table 3.0-4). However, review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include only a 5-acre parking lot (see excerpt below) (Appendix C, pp. 46, 79, 112, 139, 166, 193).

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	603.10	1000sqft	16.00	603,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	5.00	Acre	5.00	217,800.00	0

As you can see in the excerpt above, the model includes only 5-acres of parking lot space. However, when inputting 778 parking spaces[6] into CalEEMod, plus the addition of the 1.18-acre trailhead parking lot, the model should include 8.18-acres of parking lot space. Thus, the parking lot land use size is underestimated by 3.18-acres in the model.

This underestimation present an issue, as the land use size feature is used throughout CalEEMod to determine default variable and emission factors that go into the model's calculations. The square footage of a parking lot land use space is used for certain calculations such as determining the ground space to be painted and amount of degreaser to be used (i.e., VOC emissions from architectural coatings and consumer products) and area that is lighted (i.e., energy impacts).[7] Thus, by underestimating the proposed parking lot land use size, the models underestimate the Project's construction-related and operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Reductions to Architectural Coating Emission Factors

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include several reductions to the default architectural coating emission factors (see excerpt below) (Appendix C, pp. 47, 80, 113, 140, 167, 194).

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00

As you can see in the excerpt above, the nonresidential exterior and interior architectural coating emission factors were each reduced from the default value of 100- to 50-grams per liter (g/L). As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[8]

[6] 388 parking spaces for Building A + 110 trailer stalls for Building A + 235 parking spaces for Building B + 45 trailer stalls for Building B = 778 total parking spaces.
[7] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 28.
[8] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9

According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "SCAQMD Rule 1113 - Building Envelope and Non-Flat Coating limit = 50 g/L" (Appendix C, pp. 47, 80, 113, 140, 167, 194). However, these changes remain unsupported for two reasons.

First, the DEIR fails to mention SCAQMD Rule 1113, or specify the reactive organic gas/volatile organic compound ("ROG"/"VOC") content limits that would be required. As a result, we cannot verify the revised architectural coating emission factors.

Second, we cannot verify the accuracy of the revised architectural coating emission factors based on SCAQMD Rule 1113 alone. The SCAQMD Rule 1113 Table of Standards provides the required VOC limits (grams of VOC per liter of coating) for 57 different coating categories (e.g., Floor coatings, Faux Finishing Coatings, Fire-Proofing Coatings, Cement Coatings, Multi-Color Coatings, Primers, Sealers, Recycled Coatings, Shellac, Stains, Traffic Coatings, Waterproofing Sealers, Wood Coatings, etc.).[9] The VOC limits for each coating varies from a minimum value of 50 g/L to a maximum value of 730 g/L. As such, we cannot verify that SCAQMD Rule 1113 substantiates a reduction to the default coating values without more information regarding what category of coating will be used. Absent additional information regarding which categories of coating would be used for Project construction, we cannot compare the revised emission factors with the SCAQMD Rule 1113 requirements for those categories. The DEIR and associated documents fail to mention what type of coating will be used, and as such, we are unable to verify the revised emission factors assumed in the model.

These unsubstantiated reductions present an issue, as CalEEMod uses the architectural coating emission factors to calculate the Project's ROG/VOC emissions associated with application rates and coating content.[10] Thus, by including unsubstantiated reductions to the default architectural coating emission factors, the models may underestimate the Project's ROG/VOC emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Individual Construction Phase Lengths

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include changes to the default individual construction phase lengths (see excerpt below) (Appendix C, pp. 47-48, 80-81, 113-114, 140-141, 167-168 194-195).

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[9] SCAQMD Rule 1113 Advisory Notice." SCAQMD, February 2016, *available at:* http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1113.pdf?sfvrsn=24, p. 1113-14, Table of Standards 1.

[10] CalEEMod User Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 35, 40.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	111.00
tblConstructionPhase	NumDays	740.00	243.00
tblConstructionPhase	NumDays	75.00	47.00
tblConstructionPhase	NumDays	55.00	18.00
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	PhaseEndDate	11/27/2024	6/30/2022
tblConstructionPhase	PhaseEndDate	6/26/2024	6/6/2022
tblConstructionPhase	PhaseEndDate	8/25/2021	6/30/2021
tblConstructionPhase	PhaseEndDate	9/11/2024	6/30/2022
tblConstructionPhase	PhaseEndDate	5/12/2021	4/26/2021
tblConstructionPhase	PhaseStartDate	9/12/2024	1/27/2022
tblConstructionPhase	PhaseStartDate	8/26/2021	7/1/2021
tblConstructionPhase	PhaseStartDate	5/13/2021	4/27/2021
tblConstructionPhase	PhaseStartDate	6/27/2024	6/7/2022

As a result of these changes, the model includes a construction schedule as follows (see excerpt below) (Appendix C, pp. 53, 86, 118, 145, 172, 199).

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/30/2021	5	47	
3	Building Construction	Building Construction	7/1/2021	6/6/2022	5	243	
4	Paving	Paving	6/7/2022	6/30/2022	5	18	
5	Architectural Coatings	Architectural Coating	1/27/2022	6/30/2022	5	111	

As you can see in the excerpts above, the site preparation phase length was reduced by roughly 67%, from the default value of 55 to 18 days; the grading phase length was reduced by roughly 37%, from the default value of 75 to 47 days; the building construction phase length was reduced by roughly 67%, from the default value of 740 to 243 days; the paving phase length was reduced by roughly 40%, from the default value of 30 to 18 days; and the architectural coating phase length was increased by roughly 102%, from the default value of 55 to 111 days. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[11] According to the "User Entered Comments & Non-Default Data" table, the justification provided for this change is: "Grading/Prliminary Road Construction - 3 months Building Permit/Building Construction - 12 months" (Appendix C, pp. 47, 80, 113, 140, 167, 194). Furthermore, regarding the anticipated construction schedule, the DEIR states:

> "Overall construction is anticipated to last approximately 15 months. Grading and preliminary road construction is the first phase and is expected to last approximately 3 months. After grading, building construction will last approximately 12 months and includes slab and wall framing, concrete pouring, roof installation building interiors" (p. 1.0-3 – 1.0-4).

[11] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9

However, these justifications are insufficient, as the DEIR fails to justify or explain why the individual constriction phase lengths were *disproportionately* altered. While the grading and site preparation phases correctly last for three months, and the building construction, paving, and architectural coating correctly last for one year, the model should have proportionally altered them based on the CalEEMod default values.

These unsubstantiated changes present an issue, as they improperly spread out construction emissions over a longer period of time for some phases, but not others. According to the CalEEMod User's Guide, each construction phase is associated with different emissions activities (see excerpt below).[12]

> *Demolition* involves removing buildings or structures.
>
> *Site Preparation* involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.
>
> *Grading* involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.
>
> *Building Construction* involves the construction of the foundation, structures and buildings.
>
> *Architectural Coating* involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.
>
> *Paving* involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

As such, by disproportionately altering individual construction phase lengths without proper justification, the model's calculations are altered and may underestimate emissions. Thus, by including unsubstantiated changes to the default individual construction phase lengths, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Reductions to Vendor and Worker Trip Numbers

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include several changes to the default vendor and worker trip numbers (see excerpt below) (Appendix C, pp. 49, 82, 115, 142, 169, 196).

Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	VendorTripNumber	249.00	99.00
tblTripsAndVMT	WorkerTripNumber	638.00	253.00

As you can see in the excerpt above, the default vendor trip and worker trip numbers were reduced by approximately 60%, from the default value of 249 to 99 trips, and from the default value of 638 to 253 trips, respectively. As previously mentioned, the CalEEMod User's Guide requires any changes to model

[12] "CalEEMod User's Guide." CAPCOA, November 2017, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 31.

defaults be justified.[13] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "CalEEMod applies same worker/vendor trip rates to parking/asphalt surfaces as it does to office/industrial building construction, resulting in overestimate of actual trips. Default trips adjusted to reflect builing construction of buildings only" (Appendix C, pp. 47, 80, 113, 140, 167, 194). However, these changes remain unsubstantiated. According to the CalEEMod User's Guide:

> "CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, *provided that the information is supported by substantial evidence as required by CEQA*." [14]

Here, as the DEIR and AQ & HRA Memo fail to provide substantial evidence to support these reduced vendor and worker trip numbers, we cannot verify the changes. Furthermore, while the DEIR mentions worker and vendor trips, these changes are not substantiated whatsoever, and a greater number of vendor trips is indicated than is included in the model (p. 5.5-18; 5.5-19; p. 5.5-20, Table 5.5-4; p. 5.5-20, Table 5.5-5).

These unsubstantiated changes present an issue, as CalEEMod uses the vendor and worker trip numbers to estimate the construction-related emissions associated with on-road vehicles.[15] Thus, by including unsubstantiated changes to the default vendor and worker trip numbers, the models may underestimate the Project's mobile-source construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Operational Vehicle Fleet Mix Percentages

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include several changes to the default operational vehicle fleet mix percentages (see excerpt below) (Appendix C, pp. 48, 81, 114, 141, 168, 195).

[13] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
[14] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 12.
[15] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 34.

“9309 Sycamore Hills Distribution Center – Passenger Cars”

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	1.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.8470e-003	0.00
tblFleetMix	MCY	4.8220e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.6900e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1100e-003	0.00
tblFleetMix	SBUS	7.1000e-004	0.00
tblFleetMix	UBUS	1.7690e-003	0.00

“9309 Sycamore Hills Distribution Center – Trucks”

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.03	0.37
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LHD1	0.02	0.17
tblFleetMix	LHD2	5.8470e-003	0.21
tblFleetMix	MCY	4.8220e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.6900e-004	0.00
tblFleetMix	MHD	0.02	0.25
tblFleetMix	OBUS	2.1100e-003	0.00
tblFleetMix	SBUS	7.1000e-004	0.00
tblFleetMix	UBUS	1.7690e-003	0.00

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.[16] However, according to the “User Entered Comments & Non-Default Data” tables in the “9309 Sycamore Hills Distribution Center – Passenger Cars” and “9309 Sycamore Hills Distribution Center – Trucks” models, the justifications provided for these changes are: “Passenger cars only” and “Trucks only, mix per TIA,” respectively (Appendix C, pp. 47, 80, 113, 140, 167, 194). Furthermore, the Traffic Impact Analysis, Vehicle Miles Traveled (VMT) Analysis (“TIA”), provided as Appendix L to the DEIR, provide the following fleet mix percentages (see excerpt below) (pp. 64, Table 4-1):

[16] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9

Project Trip Generation Rates									
Land Use[1]	ITE LU Code	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
High-Cube Transload Short-Term Warehouse without Cold Storage[3,4,5]	154	TSF	0.062	0.018	0.080	0.028	0.072	0.100	1.400
Passenger Cars (69.2% AM, 78.3% PM, 67.8% Daily)			0.043	0.013	0.056	0.022	0.056	0.078	0.949
2-Axle Trucks (5.14% AM, 3.62% PM, 5.38% Daily)			0.003	0.001	0.004	0.001	0.003	0.004	0.076
3-Axle Trucks (6.38% AM, 4.49% PM, 6.66% Daily)			0.004	0.001	0.005	0.001	0.003	0.004	0.093
4-Axle+ Trucks (19.28% AM, 13.59% PM, 20.16% Daily)			0.012	0.003	0.015	0.004	0.010	0.014	0.282

1 Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).
2 TSF = thousand square feet
3 Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Handbook, Third Edition (September 2017).
4 Vehicle Mix Source: Institute of Transportation Engineers (ITE), High-Cube Warehouse Vehicle Trip Generation Analysis (October 2016).
5 Truck Mix Source: SCAQMD Warehouse Truck Trip Study Data Results and Usage (2014).
Normalized % - Without Cold Storage:
16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks
6 TOTAL TRIPS (Actual Vehicles) = Passenger Cars + Truck Trips (Actual Trucks).

However, this is insufficient for two reasons. First, the "9309 Sycamore Hills Distribution Center – Passenger Cars" model includes 100% light-duty auto ("LDA") vehicles; however, passenger cars refers to all light-duty and medium-duty vehicles. Second, the DEIR and associated documents fail to mention or justify how the truck fleet mix provided by the TIA correlates to the revised operational vehicle fleet mix percentages included in the "9309 Sycamore Hills Distribution Center – Trucks" model. As such, we cannot verify the revised values.

These unsubstantiated changes present an issue, as operational vehicle fleet mix percentages are used by CalEEMod to calculate the Project's operational emissions associated with on-road vehicles.[17] Thus, by including unsubstantiated changes to the default operational vehicle fleet mix, the models may underestimate the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

Unsubstantiated Reduction to Indoor Water Use Rate

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include a manual reduction to the default indoor water use rate (see excerpt below) (Appendix C, pp. 49, 82, 115, 142, 169, 196).

Table Name	Column Name	Default Value	New Value
tblWater	IndoorWaterUseRate	139,466,875.00	111,573,500.00

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[18] According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is: "CalGreen requires 20% reduction in indoor water use (111,573,500 gallons)" (Appendix C, pp. 47, 80, 113, 140, 167, 194). Furthermore, the DEIR states:

17 CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9
18 CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 2, 9

> “[T]he project would be required to reduce indoor water consumption by 20 percent in accordance with CalGreen” (p. 5.7-40, Table 5.7-8).

However, these justifications are insufficient. Simply because CalGreen *expects* a 20% reduction in indoor water use does not *guarantee* that this reduction would be implemented locally on the Project site. Absent additional information demonstrating that these reductions would be achieved through the implementation, monitoring, and enforcement of water-related mitigation measures, we are unable to verify the revised indoor water use rate inputted into the model.

This unsubstantiated reduction presents an issue, as CalEEMod uses indoor water use rates to estimate the amount of wastewater, which has direct emissions of GHGs.[19] By including an unsubstantiated reduction to the default indoor water use rate, the models may underestimate the Project’s water-related operational emissions and should not be relied upon to determine Project significance.

Incorrect Application of Construction-Related Mitigation Measure

Review of the CalEEMod output files demonstrates that the “9309 Sycamore Hills Distribution Center – Passenger Cars” and “9309 Sycamore Hills Distribution Center – Trucks” models include the following construction-related mitigation measure (see excerpt below) (Appendix C, pp. 55, 88, 120, 147, 174, 201):

3.1 Mitigation Measures Construction

Water Exposed Area

As a result, the model includes 61% PM_{10} and $PM_{2.5}$ reductions (see excerpt below) (Appendix C, pp. 47, 80, 113, 140, 167, 194):

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	55	61
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	55	61

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.[20] According to the “User Entered Comments and Non-Default Data” table, the justification provided for the inclusion of this measures is: “61% fugitive dust reduction associated with watering” (Appendix C, pp. 47, 80, 113, 140, 167, 194). Furthermore, the DEIR incorporates Mitigation Measure “MM” BIO-3, which states:

> “Water any exposed soil areas a minimum of twice per day, or as allowed under any imposed drought restrictions” (p. 1.0-17, Table 1.0-1).

[19] CalEEMod User Guide, *available at:* http://www.caleemod.com/, p. 44, 45.
[20] CalEEMod User’s Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

However, while this measure is included in the DEIR, there is no mention of a 61% reduction in PM_{10} and $PM_{2.5}$ emissions whatsoever. As such, we are unable to verify this percent emissions reduction included in the models. By incorrectly including an emissions reduction associated with the above-mentioned construction-related mitigation measure, the models may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Incorrect Application of Waste-Related Operational Mitigation Measure

Review of the CalEEMod output files demonstrates that the "9309 Sycamore Hills Distribution Center – Passenger Cars" and "9309 Sycamore Hills Distribution Center – Trucks" models include the following waste-related operational mitigation measure (see excerpt below) (Appendix C, pp. 75, 108, 138, 165, 192, 219):

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

However, the inclusion of this waste-related operational mitigation measure is unsupported. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.[21] However, the "User Entered Comments and Non-Default Data" table fails to provide a justification for the inclusion of these measures (Appendix C, pp. 47, 80, 113, 140, 167, 194). Furthermore, the DEIR's *Project Design Considerations* state:

> "Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas" (p. 5.5-15).

However, this design feature is not formally included as a mitigation measure. This is incorrect, as according to the Association of Environmental Professionals ("AEP") *CEQA Portal Topic Paper* on mitigation measures:

> "While not "mitigation", a good practice is *to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP)*. Often the MMRP is all that accompanies building and construction plans through the permit process. If the design features are not listed as important to addressing an environmental impact, *it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact*" (emphasis added).[22]

As you can see in the excerpt above, design features that are not formally included as mitigation measures *may be eliminated from the Project's design altogether*. Thus, as the above-mentioned waste-

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[21] CalEEMod User Guide, *available at:* http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

[22] "CEQA Portal Topic Paper Mitigation Measures." AEP, February 2020, *available at:* https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf, p. 6.

related operational measure is not formally included as a mitigation measure, we cannot guarantee that it would be implemented, monitored, and enforced on the Project site. As a result, the inclusion of the above-mentioned operational mitigation measure in the model is incorrect. By including an operational mitigation measure without properly committing to its implementation, the models may underestimate the Project's operational emissions and should not be relied upon to determine Project significance.

Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to more accurately estimate the Project's construction-related and operational emissions, we prepared updated CalEEMod models, using the Project-specific information provided by the DEIR. In our updated model, we included the correct land use types and sizes, omitted the unsubstantiated changes to the default CH_4, CO_2, and N_2O intensity factors, architectural coating emission factors, vendor and worker trip numbers, and indoor water use rate; proportionally altered the individual construction phase lengths as well as proportionally adjusted to the operational vehicle fleet mix percentages to reflect CalEEMod default values; and excluded the unsubstantiated construction-related percent PM_{10} and $PM_{2.5}$ emissions reductions and waste-related operational mitigation measure.

Our updated analysis estimates that the Project's construction-related ROG and operational NO_X emissions exceed the applicable SCAQMD threshold of 75- and 55- pounds per day ("lbs/day"), as referenced by the DEIR (p. 5.2-26, 5.2-31) (see table below).

Model	VOC (lbs/day)
DEIR Construction	32.00
SWAPE Construction	347
% Increase	984%
SCAQMD Regional Threshold (lbs/day)	**75**
Threshold Exceeded?	***Yes***

Model	NO_x (lbs/day)
DEIR Operation	38
Area	< 1
Energy	< 1
Passenger Car Mobile	2
Truck Mobile	58
SWAPE Operation	60
% Increase	58%
SCAQMD Regional Threshold (lbs/day)	**55**
Threshold Exceeded?	***Yes***

As you can see in the excerpt above, the Project's construction-related VOC and operational NO_X emissions, as estimated by SWAPE, increase by approximately 984% and 58%, respectively, and exceed the applicable SCAQMD significance thresholds. Thus, our model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the DEIR. As a result, an updated EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the surrounding environment.

Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The DEIR concludes diesel particulate matter ("DPM") emissions associated with Project operation would pose a maximum incremental cancer risk of 0.49 in one million to nearby, existing sensitive receptors, which would not exceed the SCAQMD significance threshold of 10 in one million (p. 5.2-34 – 5.2-35). Furthermore, in regard to the Project's construction-related health risk impacts, the DEIR states:

> "Heavy-duty off-road construction equipment (graders, excavators, dozers, scrapers, loaders, etc.) typically have diesel engines and emit DPM emissions. However, construction activity is typically short-term (1-2 years or less), as is anticipated for the proposed Sycamore Hills Distribution Center project, and does not constitute long-term exposure, typically used to generate risk estimates. As outlined above, construction emissions would not exceed SCAQMD thresholds established to protect public health and air quality. Therefore, the health risk associated with construction emissions would be less than significant for the surrounding sensitive uses and no mitigation is required" (p. 5.2-35).

As demonstrated above, the DEIR concludes that the Project would result in a less-than-significant construction-related health risk impact because construction activity would be short term and construction-related criteria air pollutant emissions would not exceed thresholds. However, the DEIR's evaluation of the Project's potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

First, the DEIR fails to quantitatively evaluate the Project's construction-related toxic air contaminant ("TAC") emissions or make a reasonable effort to connect these emissions to potential health risk impacts posed to nearby existing sensitive receptors. Despite the DEIR's qualitative claims, construction of the proposed Project will produce emissions of DPM through the exhaust stacks of construction equipment over a potential construction duration of one year and three months (p. 1.0-3). However, the DEIR's vague discussion of potential DPM associated with Project construction fails to indicate the concentrations at which such pollutants would trigger adverse health effects. Thus, without making a reasonable effort to connect the Project's construction-related TAC emissions to the potential health risks posed to nearby receptors, the DEIR is inconsistent with CEQA's requirement to correlate the increase in emissions generated by the Project with the potential adverse impacts on human health.

Second, the State of California Department of Justice recommends the preparation of a quantitative HRA pursuant to the Office of Environmental Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines.[23] OEHHA released its most recent *Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments* in February 2015.[24] This guidance document describes the types of projects that warrant the preparation of an HRA. The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors. As the Project's proposed construction duration vastly exceeds the 2-month requirement set forth by OEHHA, it is clear that the Project meets the threshold warranting a quantified construction-related HRA under OEHHA guidance. These recommendations reflect the most recent state health risk policies, and as such, we recommend that an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated construction DPM emissions be included in an updated EIR for the Project.

Third, while the DEIR includes an HRA evaluating the Project's mobile-source operational health risk impacts to nearby, existing receptors as a result of Project-generated mobile emissions, the HRA fails to evaluate the *cumulative* lifetime cancer risk to nearby, existing receptors as a result of Project *construction and operation together*. According to OEHHA guidance, as referenced by the AQ & HRA Memo, "the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk at the receptor location" (Appendix C, p. 22).[25] However, the DEIR's HRA fails to sum each age bin to evaluate the total cancer risk over the course of the Project's total construction and operation. This is incorrect and thus, an updated analysis should quantify the entirety of the Project's *construction and operational health risks together* and then sum them to compare to the SCAQMD threshold of 10 in one million, as referenced by the AQ & HRA Memo (Appendix C, p. 22).

Screening-Level Analysis Indicates a Potentially Significant Health Risk Impact

In order to conduct our screening-level risk analysis we relied upon AERSCREEN, which is a screening level air quality dispersion model.[26] The model replaced SCREEN3, and AERSCREEN is included in the OEHHA[27] and the California Air Pollution Control Officers Associated ("CAPCOA")[28] guidance as the appropriate air dispersion model for Level 2 health risk screening analyses ("HRSAs"). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

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[23] "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice, *available at*: https://oag.ca.gov/sites/all/files/agweb/pdfs/environment/warehouse-best-practices.pdf, p. 6.
[24] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/hotspots2015.html.
[25] "Guidance Manual for preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 8-4
[26] U.S. EPA (April 2011) AERSCREEN Released as the EPA Recommended Screening Model, http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf
[27] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf
[28] CAPCOA (July 2009) Health Risk Assessments for Proposed Land Use Projects, http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

We prepared a preliminary HRA of the Project's construction-related health risk impact to residential sensitive receptors using the annual PM_{10} exhaust estimates from the DEIR's CalEEMod output files. Consistent with recommendations set forth by OEHHA, we assumed residential exposure begins during the third trimester stage of life. The DEIR's CalEEMod model indicates that construction activities will generate approximately 253 pounds of DPM over the 455-day construction period. The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{253.2\ lbs}{455\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3{,}600\ seconds} = \mathbf{0.00292\ g/s}$$

Using this equation, we estimated a construction emission rate of 0.00292 grams per second ("g/s"). Construction activities were simulated as a 12.23-acre rectangular area source in AERSCREEN with dimensions of 505 by 98 meters. A release height of three meters was selected to represent the height of exhaust stacks on operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant be estimated by multiplying the single-hour concentration by 10%.[29] According to the DEIR, "[t]he sensitive receptors nearest to the Project site include single and multi-family residences to the south and southeast of the Project site" (p. 5.2-10). Review of Google Earth demonstrates that these sensitive receptors are located roughly 100 meters from the site. However, review of the AERSCREEN output files demonstrates that the *maximally* exposed receptor is located approximately 250 meters from the Project site. Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 2.414 $\mu g/m^3$ DPM at approximately 250 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.2414 $\mu g/m^3$ for Project construction at the MEIR.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA. Consistent with the 455-day construction schedule included in the Project's CalEEMod output files, the annualized average concentration for Project construction was used for the entire third trimester of pregnancy (0.25 years) and one year of the infantile stage of life (0 – 2 years).

[29] "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised." EPA, 1992, *available at*: http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf; *see also* "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf p. 4-36.

Consistent with the DEIR's operational HRA, we used Age Sensitivity Factors ("ASF") to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution (Appendix B, p. 83). When applying ASFs, the quantified cancer risk should be multiplied by a factor of ten during the third trimester of pregnancy and during the first two years of life (infant) as well as multiplied by a factor of three during the child stage of life (2 – 16 years). Furthermore, in accordance with the guidance set forth by OEHHA, we used the 95th percentile breathing rates for infants.[30] Finally, according to SCAQMD guidance, we used a Fraction of Time At Home ("FAH") Value of 1 for the 3rd trimester and infant receptors.[31] We used a cancer potency factor of 1.1 $(mg/kg\text{-}day)^{-1}$ and an averaging time of 25,550 days. The results of our calculations are shown below.

The Maximum Exposed Individual at an Existing Residential Receptor (MEIR)

Activity	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	ASF	Cancer Risk with ASFs*
Construction	0.25	0.2414	361	10	3.3E-06
3rd Trimester Duration	***0.25***			***3rd Trimester Exposure***	***3.3E-06***
Construction	1.00	0.2414	1090	10	4.0E-05
Infant Exposure Duration	***2.00***			***Infant Exposure***	***4.0E-05***
Construction	6.00	*	572	3	*
Operation	6.00	*	572	3	*
Child Exposure Duration	***14.00***			***Child Exposure***	
Operation	14.00	*	261	1	*
Adult Exposure Duration	***14.00***			***Adult Exposure***	
Lifetime Exposure Duration	**30.00**			**Lifetime Exposure**	**4.3E-05**

* Operational cancer risk calculated separately in the AQ, GHG, & HRA Report.

As demonstrated in the table above, the excess cancer risks to infants and during the 3rd trimester of pregnancy at the MEIR located approximately 250 meters away, over the course of Project construction, are approximately 40 and 3.3 in one million, respectively. The excess cancer risk associated with the

[30] "Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics 'Hot Spots' Information and Assessment Act," July 2018, *available at:* http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588supplementalguidelines.pdf, p. 16.
"Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf
[31] "Risk Assessment Procedures for Rules 1401, 1401.1, and 212." SCAQMD, August 2017, *available at:* http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf, p. 7.

Project construction alone over the course of a residential lifetime is approximately 43 in one million. When summing Project's construction-related cancer risk, as estimated by SWAPE, with the DEIR's excess operational cancer risk estimate of 0.49 in one million, we estimate an excess cancer risk of approximately 43.49 in one million over the course of a residential lifetime (Appendix C, pp. 502, Table ES-1).[32] The infant and lifetime cancer risks exceed the SCAQMD threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the DEIR.

An agency must include an analysis of health risks that connects the Project's air emissions with the health risk posed by those emissions. Our analysis represents a screening-level HRA, which is known to be conservative and tends to err on the side of health protection. [33] The purpose of the screening-level construction and operational HRA shown above is to demonstrate the link between the proposed Project's emissions and the potential health risk. Our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. Therefore, since our screening-level HRA indicates a potentially significant impact, the City should prepare a Project-specific EIR with an HRA which makes a reasonable effort to connect the Project's air quality emissions and the potential health risks posed to nearby receptors. Thus, the City should prepare an updated, quantified air pollution model as well as an updated, quantified refined health risk analysis which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 7,405 metric tons of carbon dioxide equivalents per year ("MT CO2e/year"), which would not exceed the SCAQMD bright-line threshold of 10,000 MT CO2e/year for industrial projects (see excerpt below) (p. 5.7-26, Table 5.7-7).

[32] Calculated: 78 in one million + 4.62 in one million = 82.62 in one million.

[33] "Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments." OEHHA, February 2015, *available at:* https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, p. 1-5

Table 5.7-7 – Summary of Project GHG Emissions (metric tons per year)

Source	MT CO_2	MT CH_4	MT N_2O	MT CO_2E
Mobile – Passenger Cars	1,204	<1	0	1,204
Mobile – Trucks	4,316	<1	0	4,320
Energy Source	781	<1	<1	782
Area Sources	<1	<1	0	<1
Water/Wastewater Sources	728	4	<1	846
Solid Waste Sources	86	5	1	214
Construction (Amortized over 30 years)	37	<1	0	38
Total	**7,152**	**9**	**<1**	**7,405***
SCAQMD Significance Threshold for Industrial Sources				*10,000*

MT CO_2E = metric tons of carbon dioxide equivalent
MT CH_4 = metric tons of methane
MT N_2O = metric tons of nitrous oxide
*The GWPs included in CalEEMod are from the IPCC Fourth Assessment Report. For informational purposes, total emissions calculated by CalEEMod were adjusted to account for the updated IPCC Fifth Assessment Report GWPs. Using the current GWPs, total annual project emissions would be 7,428 MT CO2, and would also be less than the screening threshold. Note that the IPCC updates the GWPs periodically, and the next anticipated update will occur in 2022.

Furthermore, the DEIR relies upon the Project's consistency with the 2008 Good Neighbor Guidelines, CARB's 2017 Scoping Plan, and the Riverside Restorative Growthprint and Climate Action Plan ("RRG-CAP") in order to conclude that the Project would result in a less-than-significant GHG impact (p. 5.7-28 - 5.7-40). However, the DEIR's GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

(1) The DEIR's GHG analysis relies upon an incorrect and unsubstantiated air model;
(2) The DEIR incorrectly relies upon the Riverside Restorative Growthprint and Climate Action Plan; and
(3) The DEIR fails to consider the performance-based standards under CARB's *Scoping Plan*.

1) Incorrect and Unsubstantiated Quantitative Analysis of Emissions

As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 7,405 MT CO2e/year (p. 5.7-26, Table 5.7-7). However, the DEIR's quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the Project's CalEEMod output files, provided in the AQ & HRA Memo as Appendix C to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR. As a result, the model underestimates the Project's emissions, and the DEIR's quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

2) Failure to Comply with the Riverside Restorative Growthprint and Climate Action Plan

As previously discussed, the DEIR relies upon the Project's consistency with the City of Riverside *Restorative Growthprint and Climate Action Plan* (RG-CAP). However, review of these guidelines demonstrates that the DEIR's analysis is unsubstantiated, and the less-than-significant impact conclusion should not be relied upon. Specifically, according to the RG-CAP:

> "The Subregional CAP suggests a goal for 2035 equivalent to 49 percent below baseline emissions. This is derived from a straight-line interpolation of the state-wide AB 32 goal and Executive Order (EO) S-3-05, which aims for 80% below 1990 levels by 2050.5 Using this approach, the City of Riverside is setting its 2035 GHG emissions goal to 49% below the 2007 baseline" (p. B.2-15).[34]

As demonstrated in the excerpt above, the RG-CAP sets a 2035 emissions reduction target of 49% below 2007 baseline emissions. However, review of the DEIR demonstrates that the Project fails to mention or demonstrate compliance with this goal whatsoever. While the DEIR includes a list discussing compliance with various strategies/goals of the RG-CAP, the DEIR fails to mention or provide substantial evidence of a 49% emissions reduction from the 2007 baseline. As such, the DEIR's GHG analysis and subsequent less-than-significant impact conclusion should not be relied upon and an updated EIR should instead demonstrate compliance with the RG-CAP.

3) Failure to Consider Performance-based Standards Under CARB's 2017 Scoping Plan

As previously discussed, the DEIR relies upon the Project's consistency with CARB's 2017 *Scoping Plan* to determine Project GHG significance (p. 5.7-28 - 5.7-40). However, this is incorrect, as the DEIR fails to consider performance-based measures proposed by CARB.

i. Passenger & Light Duty VMT Per Capita Benchmarks per SB 375

In reaching the State's long-term GHG emission reduction goals, CARB's 2017 *Scoping Plan* explicitly cites to SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.[35] CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a "baseline scenario" that includes "current projections of VMT included in the existing Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State's 18 Metropolitan Planning Organizations (MPOs) pursuant to SB 375 as of 2015."[36] By dividing the projected daily VMT by the population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2022 (Project operational year), and 2030 (target years under SB 32) (see table below).

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[34] "Riverside Restorative Growthprint: Economic Prosperity Action Plan and Climate Action Plan." City of Riverside, January 2016, *available at:* https://corweb.riversideca.gov/cedd/sites/riversideca.gov.cedd/files/pdf/planning/other-plans/2016%20Riverside%20Restorative%20Growthprint%20Economic%20Proposerity%20Action%20Plan%20and%20Climate%20Action%20Plan.pdf.

[35] "California's 2017 Climate Change Scoping Plan." CARB, November 2017, *available at*: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, p. 25, 98, 101-103.

[36] "Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions," Excel Sheet "Readme." CARB, January 2019, *available at*: https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx.

2017 Scoping Plan Daily VMT Per Capita						
	San Bernardino County			State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	2,043,484	55,741,307.23	27.28	37,335,085	836,463,980.46	22.40
2022	2,278,414	61,507,949.89	27.00	41,321,565	916,010,145.57	22.17
2030	2,478,888	65,538,854.28	26.44	43,939,250	957,178,153.19	21.78

As the DEIR fails to evaluate the Project's consistency with the CARB 2017 *Scoping Plan* performance-based daily VMT per capita projections, the DEIR's claim that the proposed Project would not conflict with the CARB 2017 *Scoping Plan* is unsupported. An updated EIR should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant air quality, health risk, and greenhouse gas impacts that should be mitigated further. In an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Feasible mitigation measures can be found in the Department of Justice Warehouse Project Best Practices document.[37] Therefore, to reduce the Project's emissions, consideration of the following measures should be made:

- Requiring off-road construction equipment to be zero-emission, where available, and all diesel-fueled off-road construction equipment, to be equipped with CARB Tier IV-compliant engines or better, and including this requirement in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant construction equipment for use prior to any ground-disturbing and construction activities.
- Prohibiting off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Requiring on-road heavy-duty haul trucks to be model year 2010 or newer if diesel-fueled.
- Providing electrical hook ups to the power grid, rather than use of diesel-fueled generators, for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
- Limiting the amount of daily grading disturbance area.
- Prohibiting grading on days with an Air Quality Index forecast of greater than 100 for particulates or ozone for the project area.
- Forbidding idling of heavy equipment for more than two minutes.
- Keeping onsite and furnishing to the lead agency or other regulators upon request, all equipment maintenance records and data sheets, including design specifications and emission control tier classifications.

[37] "Warehouse Projects: Best Practices and Mitigation Measures to Comply with the California Environmental Quality Act." State of California Department of Justice.

- Conducting an on-site inspection to verify compliance with construction mitigation and to identify other opportunities to further reduce construction impacts.
- Using paints, architectural coatings, and industrial maintenance coatings that have volatile organic compound levels of less than 10 g/L.
- Providing information on transit and ridesharing programs and services to construction employees.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations for construction employees.
- Requiring that all facility-owned and operated fleet equipment with a gross vehicle weight rating greater than 14,000 pounds accessing the site meet or exceed 2010 model-year emissions equivalent engine standards as currently defined in California Code of Regulations Title 13, Division 3, Chapter 1, Article 4.5, Section 2025. Facility operators shall maintain records on-site demonstrating compliance with this requirement and shall make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring all heavy-duty vehicles entering or operated on the project site to be zero-emission beginning in 2030.
- Requiring on-site equipment, such as forklifts and yard trucks, to be electric with the necessary electrical charging stations provided.
- Requiring tenants to use zero-emission light- and medium-duty vehicles as part of business operations.
- Forbidding trucks from idling for more than two minutes and requiring operators to turn off engines when not in use.
- Posting both interior- and exterior-facing signs, including signs directed at all dock and delivery areas, identifying idling restrictions and contact information to report violations to CARB, the air district, and the building manager.
- Installing and maintaining, at the manufacturer's recommended maintenance intervals, air filtration systems at sensitive receptors within a certain radius of facility for the life of the project.
- Installing and maintaining, at the manufacturer's recommended maintenance intervals, an air monitoring station proximate to sensitive receptors and the facility for the life of the project, and making the resulting data publicly available in real time. While air monitoring does not mitigate the air quality or greenhouse gas impacts of a facility, it nonetheless benefits the affected community by providing information that can be used to improve air quality or avoid exposure to unhealthy air.
- Constructing electric truck charging stations proportional to the number of dock doors at the project.
- Constructing electric plugs for electric transport refrigeration units at every dock door, if the warehouse use could include refrigeration.
- Constructing electric light-duty vehicle charging stations proportional to the number of parking spaces at the project.

- Installing solar photovoltaic systems on the project site of a specified electrical generation capacity, such as equal to the building's projected energy needs.
- Requiring all stand-by emergency generators to be powered by a non-diesel fuel.
- Requiring facility operators to train managers and employees on efficient scheduling and load management to eliminate unnecessary queuing and idling of trucks.
- Requiring operators to establish and promote a rideshare program that discourages single-occupancy vehicle trips and provides financial incentives for alternate modes of transportation, including carpooling, public transit, and biking.
- Meeting CalGreen Tier 2 green building standards, including all provisions related to designated parking for clean air vehicles, electric vehicle charging, and bicycle parking.
- Achieving certification of compliance with LEED green building standards.
- Providing meal options onsite or shuttles between the facility and nearby meal destinations.
- Posting signs at every truck exit driveway providing directional information to the truck route.
- Improving and maintaining vegetation and tree canopy for residents in and around the project area.
- Requiring that every tenant train its staff in charge of keeping vehicle records in diesel technologies and compliance with CARB regulations, by attending CARBapproved courses. Also require facility operators to maintain records on-site demonstrating compliance and make records available for inspection by the local jurisdiction, air district, and state upon request.
- Requiring tenants to enroll in the United States Environmental Protection Agency's SmartWay program, and requiring tenants to use carriers that are SmartWay carriers.
- Providing tenants with information on incentive programs, such as the Carl Moyer Program and Voucher Incentive Program, to upgrade their fleets.

These measures offer a cost-effective, feasible way to incorporate lower-emitting design features into the proposed Project, which subsequently, reduce emissions released during Project construction and operation. An updated EIR should be prepared to include all feasible mitigation measures, as well as include updated air quality and health risk analyses to ensure that the necessary mitigation measures are implemented to reduce emissions to below thresholds. The updated EIR should also demonstrate a commitment to the implementation of these measures prior to Project approval, to ensure that the Project's significant emissions are reduced to the maximum extent possible.

Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

M Hagemann

Matt Hagemann, P.G., C.Hg.

Paul Rosenfeld

Paul E. Rosenfeld, Ph.D.

Attachment A: Air Modeling Calculations
Attachment B: CalEEMod Output Files
Attachment C: Health Risk Calculations
Attachment D: AERSCREEN Output Files
Attachment E: Matt Hagemann CV
Attachment D: Paul E. Rosenfeld

Construction Schedule Calculations					
Phase	Default Phase Length	Total Default Length	%	Revised Total Length	Revised Phase Length
Site Prep	30	146	0.205479452	90	18
Grading	75	146	0.51369863	90	46
Construction	740	1189	0.622371741	365	227
Paving	55	1189	0.046257359	365	17
Coating	55	1189	0.046257359	365	17

Passenger Car Fleet Mix Calculations			
Vehicle Type	Default Fleet Mix %	Total Fleet Mix %	Revised Fleet Mix %
LDA	0.552111	0.91558	0.603017759
LDT1	0.043066		0.047036851
LDT2	0.201891		0.220506127
MDV	0.118512		0.129439263

Truck Fleet Mix Calculations			
Vehicle Type	Default Fleet Mix %	Total Fleet Mix %	Revised Fleet Mix %
LHD1	0.015605	0.074108	0.21
LHD2	0.005863		0.08
MHD	0.021387		0.29
HHD	0.031253		0.42

9309 Sycamore Hills Distribution Center - Passenger Cars

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0
Unrefrigerated Warehouse-No Rail	583.10	1000sqft	15.54	583,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	8.18	Acre	8.18	356,320.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See SWAPE comment regarding CO2, CH4, and N2O intensity factors.

Construction Phase - Total construction length consistent with information provided in the DEIR, but phase lengths are proprotionally altered.

Vehicle Trips - Consistent with the DEIR's model.

Land Use - Consistent with the DEIR's model.

Grading -

Trips and VMT - See SWAPE comment regarding vendor and worker trip numbers.

Architectural Coating - See SWAPE comment regarding architectural coating emission factors.

Fleet Mix - See SWAPE comment regarding operational vehicle fleet mix. Only passenger cars. Trucks reduced to 0; passenger car percentages proportionally altered based on CalEEMod defaults. See construction calculations.

Energy Use -

Water And Wastewater - See SWAPE comment regarding indoor water use rate.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding the PM10 and PM2.5 % reductions.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	740.00	227.00
tblConstructionPhase	NumDays	75.00	46.00
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	PhaseEndDate	11/27/2024	6/29/2022
tblConstructionPhase	PhaseEndDate	6/26/2024	5/12/2022
tblConstructionPhase	PhaseEndDate	8/25/2021	6/29/2021
tblConstructionPhase	PhaseEndDate	9/11/2024	6/6/2022
tblConstructionPhase	PhaseEndDate	5/12/2021	4/26/2021
tblConstructionPhase	PhaseStartDate	9/12/2024	6/7/2022
tblConstructionPhase	PhaseStartDate	8/26/2021	6/30/2021
tblConstructionPhase	PhaseStartDate	5/13/2021	4/27/2021

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tblConstructionPhase	PhaseStartDate	6/27/2024	5/13/2022
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.20	0.22
tblFleetMix	LDT2	0.20	0.22
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.8630e-003	0.00
tblFleetMix	LHD2	5.8630e-003	0.00
tblFleetMix	MCY	4.8030e-003	0.00
tblFleetMix	MCY	4.8030e-003	0.00
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	8.9600e-004	0.00
tblFleetMix	MH	8.9600e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.0870e-003	0.00
tblFleetMix	OBUS	2.0870e-003	0.00
tblFleetMix	SBUS	7.0800e-004	0.00
tblFleetMix	SBUS	7.0800e-004	0.00
tblFleetMix	UBUS	1.8180e-003	0.00
tblFleetMix	UBUS	1.8180e-003	0.00

tblLandUse	LotAcreage	13.39	15.54
tblVehicleTrips	CC_TL	8.40	24.20
tblVehicleTrips	CC_TL	8.40	24.20
tblVehicleTrips	CNW_TL	6.90	24.20
tblVehicleTrips	CNW_TL	6.90	24.20
tblVehicleTrips	CW_TL	16.60	24.20
tblVehicleTrips	CW_TL	16.60	24.20
tblVehicleTrips	ST_TR	2.46	0.95
tblVehicleTrips	ST_TR	1.68	0.95
tblVehicleTrips	SU_TR	1.05	0.95
tblVehicleTrips	SU_TR	1.68	0.95
tblVehicleTrips	WD_TR	11.03	0.95
tblVehicleTrips	WD_TR	1.68	0.95

2.0 Emissions Summary

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5040	4.4881	4.0782	0.0130	0.9888	0.1353	1.1241	0.3412	0.1259	0.4670	0.0000	1,194.498 1	1,194.498 1	0.1277	0.0000	1,197.690 1
2022	3.2316	2.1106	2.2983	8.1000e-003	0.4525	0.0485	0.5010	0.1220	0.0455	0.1675	0.0000	747.5735	747.5735	0.0589	0.0000	749.0453
Maximum	**3.2316**	**4.4881**	**4.0782**	**0.0130**	**0.9888**	**0.1353**	**1.1241**	**0.3412**	**0.1259**	**0.4670**	**0.0000**	**1,194.498 1**	**1,194.498 1**	**0.1277**	**0.0000**	**1,197.690 1**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5040	4.4881	4.0782	0.0130	0.9888	0.1353	1.1241	0.3412	0.1259	0.4670	0.0000	1,194.497 7	1,194.497 7	0.1277	0.0000	1,197.689 8
2022	3.2316	2.1106	2.2983	8.1000e-003	0.4525	0.0485	0.5010	0.1220	0.0455	0.1675	0.0000	747.5733	747.5733	0.0589	0.0000	749.0451
Maximum	**3.2316**	**4.4881**	**4.0782**	**0.0130**	**0.9888**	**0.1353**	**1.1241**	**0.3412**	**0.1259**	**0.4670**	**0.0000**	**1,194.497 7**	**1,194.497 7**	**0.1277**	**0.0000**	**1,197.689 8**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2021**	**6-30-2021**	1.5910	1.5910
2	**7-1-2021**	**9-30-2021**	1.6707	1.6707
3	**10-1-2021**	**12-31-2021**	1.6858	1.6858
4	**1-1-2022**	**3-31-2022**	1.5280	1.5280
5	**4-1-2022**	**6-30-2022**	3.7137	3.7137
		Highest	3.7137	3.7137

2.2 Overall Operational

<u>Unmitigated Operational</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Energy	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	1,083.8134	1,083.8134	0.0235	5.8300e-003	1,086.1385
Mobile	0.1673	0.3909	4.3564	0.0168	1.7477	0.0113	1.7590	0.4640	0.0104	0.4743	0.0000	1,518.4938	1,518.4938	0.0320	0.0000	1,519.2927
Waste						0.0000	0.0000		0.0000	0.0000	115.0370	0.0000	115.0370	6.7985	0.0000	284.9993
Water						0.0000	0.0000		0.0000	0.0000	43.9068	1,098.1427	1,142.0495	4.5337	0.1115	1,288.6044
Total	**2.7164**	**0.4524**	**4.4160**	**0.0171**	**1.7477**	**0.0160**	**1.7637**	**0.4640**	**0.0151**	**0.4790**	**158.9439**	**3,700.4654**	**3,859.4093**	**11.3877**	**0.1173**	**4,179.0516**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Energy	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	1,083.8134	1,083.8134	0.0235	5.8300e-003	1,086.1385
Mobile	0.1673	0.3909	4.3564	0.0168	1.7477	0.0113	1.7590	0.4640	0.0104	0.4743	0.0000	1,518.4938	1,518.4938	0.0320	0.0000	1,519.2927
Waste						0.0000	0.0000		0.0000	0.0000	115.0370	0.0000	115.0370	6.7985	0.0000	284.9993
Water						0.0000	0.0000		0.0000	0.0000	43.9068	1,098.1427	1,142.0495	4.5337	0.1115	1,288.6044
Total	**2.7164**	**0.4524**	**4.4160**	**0.0171**	**1.7477**	**0.0160**	**1.7637**	**0.4640**	**0.0151**	**0.4790**	**158.9439**	**3,700.4654**	**3,859.4093**	**11.3877**	**0.1173**	**4,179.0516**

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

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/29/2021	5	46	
3	Building Construction	Building Construction	6/30/2021	5/12/2022	5	227	
4	Paving	Paving	5/13/2022	6/6/2022	5	17	
5	Architectural Coating	Architectural Coating	6/7/2022	6/29/2022	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 115

Acres of Paving: 24.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 904,650; Non-Residential Outdoor: 301,550; Striped Parking Area: 63,197 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	694.00	271.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	139.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1626	0.0000	0.1626	0.0894	0.0000	0.0894	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0350	0.3645	0.1904	3.4000e-004		0.0184	0.0184		0.0169	0.0169	0.0000	30.0922	30.0922	9.7300e-003	0.0000	30.3355
Total	**0.0350**	**0.3645**	**0.1904**	**3.4000e-004**	**0.1626**	**0.0184**	**0.1810**	**0.0894**	**0.0169**	**0.1063**	**0.0000**	**30.0922**	**30.0922**	**9.7300e-003**	**0.0000**	**30.3355**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.6500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5498	1.5498	4.0000e-005	0.0000	1.5508
Total	**6.7000e-004**	**5.0000e-004**	**5.6500e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5498**	**1.5498**	**4.0000e-005**	**0.0000**	**1.5508**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1626	0.0000	0.1626	0.0894	0.0000	0.0894	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0350	0.3645	0.1904	3.4000e-004		0.0184	0.0184		0.0169	0.0169	0.0000	30.0921	30.0921	9.7300e-003	0.0000	30.3354
Total	**0.0350**	**0.3645**	**0.1904**	**3.4000e-004**	**0.1626**	**0.0184**	**0.1810**	**0.0894**	**0.0169**	**0.1063**	**0.0000**	**30.0921**	**30.0921**	**9.7300e-003**	**0.0000**	**30.3354**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.6500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5498	1.5498	4.0000e-005	0.0000	1.5508
Total	**6.7000e-004**	**5.0000e-004**	**5.6500e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5498**	**1.5498**	**4.0000e-005**	**0.0000**	**1.5508**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1995	0.0000	0.1995	0.0827	0.0000	0.0827	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0964	1.0672	0.7102	1.4300e-003		0.0457	0.0457		0.0420	0.0420	0.0000	125.3385	125.3385	0.0405	0.0000	126.3519
Total	**0.0964**	**1.0672**	**0.7102**	**1.4300e-003**	**0.1995**	**0.0457**	**0.2452**	**0.0827**	**0.0420**	**0.1247**	**0.0000**	**125.3385**	**125.3385**	**0.0405**	**0.0000**	**126.3519**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9100e-003	1.4200e-003	0.0161	5.0000e-005	5.0500e-003	4.0000e-005	5.0800e-003	1.3400e-003	4.0000e-005	1.3800e-003	0.0000	4.4006	4.4006	1.2000e-004	0.0000	4.4036
Total	**1.9100e-003**	**1.4200e-003**	**0.0161**	**5.0000e-005**	**5.0500e-003**	**4.0000e-005**	**5.0800e-003**	**1.3400e-003**	**4.0000e-005**	**1.3800e-003**	**0.0000**	**4.4006**	**4.4006**	**1.2000e-004**	**0.0000**	**4.4036**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1995	0.0000	0.1995	0.0827	0.0000	0.0827	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0964	1.0672	0.7102	1.4300e-003		0.0457	0.0457		0.0420	0.0420	0.0000	125.3383	125.3383	0.0405	0.0000	126.3517
Total	**0.0964**	**1.0672**	**0.7102**	**1.4300e-003**	**0.1995**	**0.0457**	**0.2452**	**0.0827**	**0.0420**	**0.1247**	**0.0000**	**125.3383**	**125.3383**	**0.0405**	**0.0000**	**126.3517**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9100e-003	1.4200e-003	0.0161	5.0000e-005	5.0500e-003	4.0000e-005	5.0800e-003	1.3400e-003	4.0000e-005	1.3800e-003	0.0000	4.4006	4.4006	1.2000e-004	0.0000	4.4036
Total	**1.9100e-003**	**1.4200e-003**	**0.0161**	**5.0000e-005**	**5.0500e-003**	**4.0000e-005**	**5.0800e-003**	**1.3400e-003**	**4.0000e-005**	**1.3800e-003**	**0.0000**	**4.4006**	**4.4006**	**1.2000e-004**	**0.0000**	**4.4036**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1264	1.1592	1.1023	1.7900e-003		0.0638	0.0638		0.0599	0.0599	0.0000	154.0388	154.0388	0.0372	0.0000	154.9679
Total	**0.1264**	**1.1592**	**1.1023**	**1.7900e-003**		**0.0638**	**0.0638**		**0.0599**	**0.0599**	**0.0000**	**154.0388**	**154.0388**	**0.0372**	**0.0000**	**154.9679**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0518	1.7530	0.4430	4.5100e-003	0.1136	3.5700e-003	0.1171	0.0328	3.4100e-003	0.0362	0.0000	437.5739	437.5739	0.0282	0.0000	438.2791
Worker	0.1918	0.1424	1.6106	4.8800e-003	0.5063	3.8200e-003	0.5102	0.1345	3.5200e-003	0.1380	0.0000	441.5045	441.5045	0.0119	0.0000	441.8015
Total	**0.2436**	**1.8953**	**2.0537**	**9.3900e-003**	**0.6199**	**7.3900e-003**	**0.6273**	**0.1672**	**6.9300e-003**	**0.1742**	**0.0000**	**879.0783**	**879.0783**	**0.0401**	**0.0000**	**880.0806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1264	1.1592	1.1023	1.7900e-003		0.0638	0.0638		0.0599	0.0599	0.0000	154.0386	154.0386	0.0372	0.0000	154.9677
Total	**0.1264**	**1.1592**	**1.1023**	**1.7900e-003**		**0.0638**	**0.0638**		**0.0599**	**0.0599**	**0.0000**	**154.0386**	**154.0386**	**0.0372**	**0.0000**	**154.9677**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0518	1.7530	0.4430	4.5100e-003	0.1136	3.5700e-003	0.1171	0.0328	3.4100e-003	0.0362	0.0000	437.5739	437.5739	0.0282	0.0000	438.2791
Worker	0.1918	0.1424	1.6106	4.8800e-003	0.5063	3.8200e-003	0.5102	0.1345	3.5200e-003	0.1380	0.0000	441.5045	441.5045	0.0119	0.0000	441.8015
Total	**0.2436**	**1.8953**	**2.0537**	**9.3900e-003**	**0.6199**	**7.3900e-003**	**0.6273**	**0.1672**	**6.9300e-003**	**0.1742**	**0.0000**	**879.0783**	**879.0783**	**0.0401**	**0.0000**	**880.0806**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0802	0.7339	0.7691	1.2700e-003		0.0380	0.0380		0.0358	0.0358	0.0000	108.9109	108.9109	0.0261	0.0000	109.5632
Total	**0.0802**	**0.7339**	**0.7691**	**1.2700e-003**		**0.0380**	**0.0380**		**0.0358**	**0.0358**	**0.0000**	**108.9109**	**108.9109**	**0.0261**	**0.0000**	**109.5632**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0344	1.1756	0.2965	3.1600e-003	0.0803	2.2000e-003	0.0825	0.0232	2.1000e-003	0.0253	0.0000	306.5308	306.5308	0.0192	0.0000	307.0119
Worker	0.1273	0.0909	1.0512	3.3300e-003	0.3579	2.6200e-003	0.3605	0.0950	2.4100e-003	0.0975	0.0000	300.8641	300.8641	7.5900e-003	0.0000	301.0537
Total	**0.1617**	**1.2665**	**1.3476**	**6.4900e-003**	**0.4381**	**4.8200e-003**	**0.4429**	**0.1182**	**4.5100e-003**	**0.1227**	**0.0000**	**607.3949**	**607.3949**	**0.0268**	**0.0000**	**608.0656**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0802	0.7339	0.7691	1.2700e-003		0.0380	0.0380		0.0358	0.0358	0.0000	108.9107	108.9107	0.0261	0.0000	109.5630
Total	**0.0802**	**0.7339**	**0.7691**	**1.2700e-003**		**0.0380**	**0.0380**		**0.0358**	**0.0358**	**0.0000**	**108.9107**	**108.9107**	**0.0261**	**0.0000**	**109.5630**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0344	1.1756	0.2965	3.1600e-003	0.0803	2.2000e-003	0.0825	0.0232	2.1000e-003	0.0253	0.0000	306.5308	306.5308	0.0192	0.0000	307.0119
Worker	0.1273	0.0909	1.0512	3.3300e-003	0.3579	2.6200e-003	0.3605	0.0950	2.4100e-003	0.0975	0.0000	300.8641	300.8641	7.5900e-003	0.0000	301.0537
Total	**0.1617**	**1.2665**	**1.3476**	**6.4900e-003**	**0.4381**	**4.8200e-003**	**0.4429**	**0.1182**	**4.5100e-003**	**0.1227**	**0.0000**	**607.3949**	**607.3949**	**0.0268**	**0.0000**	**608.0656**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3700e-003	0.0946	0.1239	1.9000e-004		4.8300e-003	4.8300e-003		4.4400e-003	4.4400e-003	0.0000	17.0234	17.0234	5.5100e-003	0.0000	17.1611
Paving	0.0317					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0411**	**0.0946**	**0.1239**	**1.9000e-004**		**4.8300e-003**	**4.8300e-003**		**4.4400e-003**	**4.4400e-003**	**0.0000**	**17.0234**	**17.0234**	**5.5100e-003**	**0.0000**	**17.1611**

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3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	4.1100e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1760	1.1760	3.0000e-005	0.0000	1.1768
Total	**5.0000e-004**	**3.6000e-004**	**4.1100e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1760**	**1.1760**	**3.0000e-005**	**0.0000**	**1.1768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3700e-003	0.0946	0.1239	1.9000e-004		4.8300e-003	4.8300e-003		4.4400e-003	4.4400e-003	0.0000	17.0234	17.0234	5.5100e-003	0.0000	17.1611
Paving	0.0317					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0411**	**0.0946**	**0.1239**	**1.9000e-004**		**4.8300e-003**	**4.8300e-003**		**4.4400e-003**	**4.4400e-003**	**0.0000**	**17.0234**	**17.0234**	**5.5100e-003**	**0.0000**	**17.1611**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	4.1100e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1760	1.1760	3.0000e-005	0.0000	1.1768
Total	**5.0000e-004**	**3.6000e-004**	**4.1100e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1760**	**1.1760**	**3.0000e-005**	**0.0000**	**1.1768**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.9418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0120	0.0154	3.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	2.1703	2.1703	1.4000e-004	0.0000	2.1738
Total	**2.9436**	**0.0120**	**0.0154**	**3.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.4000e-004**	**0.0000**	**2.1738**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6100e-003	3.2900e-003	0.0381	1.2000e-004	0.0130	9.0000e-005	0.0131	3.4400e-003	9.0000e-005	3.5300e-003	0.0000	10.8980	10.8980	2.7000e-004	0.0000	10.9049
Total	**4.6100e-003**	**3.2900e-003**	**0.0381**	**1.2000e-004**	**0.0130**	**9.0000e-005**	**0.0131**	**3.4400e-003**	**9.0000e-005**	**3.5300e-003**	**0.0000**	**10.8980**	**10.8980**	**2.7000e-004**	**0.0000**	**10.9049**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.9418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0120	0.0154	3.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	2.1703	2.1703	1.4000e-004	0.0000	2.1738
Total	**2.9436**	**0.0120**	**0.0154**	**3.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.4000e-004**	**0.0000**	**2.1738**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6100e-003	3.2900e-003	0.0381	1.2000e-004	0.0130	9.0000e-005	0.0131	3.4400e-003	9.0000e-005	3.5300e-003	0.0000	10.8980	10.8980	2.7000e-004	0.0000	10.9049
Total	**4.6100e-003**	**3.2900e-003**	**0.0381**	**1.2000e-004**	**0.0130**	**9.0000e-005**	**0.0131**	**3.4400e-003**	**9.0000e-005**	**3.5300e-003**	**0.0000**	**10.8980**	**10.8980**	**2.7000e-004**	**0.0000**	**10.9049**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1673	0.3909	4.3564	0.0168	1.7477	0.0113	1.7590	0.4640	0.0104	0.4743	0.0000	1,518.493 8	1,518.493 8	0.0320	0.0000	1,519.292 7
Unmitigated	0.1673	0.3909	4.3564	0.0168	1.7477	0.0113	1.7590	0.4640	0.0104	0.4743	0.0000	1,518.493 8	1,518.493 8	0.0320	0.0000	1,519.292 7

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	19.00	19.00	19.00	136,850	136,850
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	553.95	553.95	553.95	4,550,823	4,550,823
Total	572.95	572.95	572.95	4,687,674	4,687,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	24.20	24.20	24.20	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	24.20	24.20	24.20	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.603018	0.047037	0.220506	0.129439	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Other Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Parking Lot	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.603018	0.047037	0.220506	0.129439	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,016.943 6	1,016.943 6	0.0223	4.6000e-003	1,018.871 4
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,016.943 6	1,016.943 6	0.0223	4.6000e-003	1,018.871 4
NaturalGas Mitigated	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	66.8698	66.8698	1.2800e-003	1.2300e-003	67.2672
NaturalGas Unmitigated	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	66.8698	66.8698	1.2800e-003	1.2300e-003	67.2672

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	69400	3.7000e-004	3.4000e-003	2.8600e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7035	3.7035	7.0000e-005	7.0000e-005	3.7255
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.18369e+006	6.3800e-003	0.0580	0.0487	3.5000e-004		4.4100e-003	4.4100e-003		4.4100e-003	4.4100e-003	0.0000	63.1664	63.1664	1.2100e-003	1.1600e-003	63.5417
Total		**6.7500e-003**	**0.0614**	**0.0516**	**3.7000e-004**		**4.6700e-003**	**4.6700e-003**		**4.6700e-003**	**4.6700e-003**	**0.0000**	**66.8698**	**66.8698**	**1.2800e-003**	**1.2300e-003**	**67.2672**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	69400	3.7000e-004	3.4000e-003	2.8600e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7035	3.7035	7.0000e-005	7.0000e-005	3.7255
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.18369e+006	6.3800e-003	0.0580	0.0487	3.5000e-004		4.4100e-003	4.4100e-003		4.4100e-003	4.4100e-003	0.0000	63.1664	63.1664	1.2100e-003	1.1600e-003	63.5417
Total		**6.7500e-003**	**0.0614**	**0.0516**	**3.7000e-004**		**4.6700e-003**	**4.6700e-003**		**4.6700e-003**	**4.6700e-003**	**0.0000**	**66.8698**	**66.8698**	**1.2800e-003**	**1.2300e-003**	**67.2672**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	190400	114.4884	2.5000e-003	5.2000e-004	114.7055
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	124712	74.9901	1.6400e-003	3.4000e-004	75.1322
Unrefrigerated Warehouse-No Rail	1.37612e+006	827.4651	0.0181	3.7500e-003	829.0337
Total		**1,016.9436**	**0.0222**	**4.6100e-003**	**1,018.8714**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	190400	114.4884	2.5000e-003	5.2000e-004	114.7055
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	124712	74.9901	1.6400e-003	3.4000e-004	75.1322
Unrefrigerated Warehouse-No Rail	1.37612e+006	827.4651	0.0181	3.7500e-003	829.0337
Total		**1,016.9436**	**0.0222**	**4.6100e-003**	**1,018.8714**

6.0 Area Detail

6.1 Mitigation Measures Area

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Unmitigated	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2474					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5000e-004	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Total	**2.5423**	**7.0000e-005**	**8.0200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0156**	**0.0156**	**4.0000e-005**	**0.0000**	**0.0166**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2474					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5000e-004	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Total	**2.5423**	**7.0000e-005**	**8.0200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0156**	**0.0156**	**4.0000e-005**	**0.0000**	**0.0166**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,142.049 5	4.5337	0.1115	1,288.604 4
Unmitigated	1,142.049 5	4.5337	0.1115	1,288.604 4

7.2 Water by Land Use

Unmitigated

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	3.55467 / 2.17867	43.5140	0.1168	2.9300e-003	47.3051
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	134.842 / 0	1,098.535 5	4.4169	0.1085	1,241.299 3
Total		**1,142.049 5**	**4.5337**	**0.1115**	**1,288.604 4**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	3.55467 / 2.17867	43.5140	0.1168	2.9300e-003	47.3051
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	134.842 / 0	1,098.535 5	4.4169	0.1085	1,241.299 3
Total		**1,142.049 5**	**4.5337**	**0.1115**	**1,288.604 4**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	115.0370	6.7985	0.0000	284.9993
Unmitigated	115.0370	6.7985	0.0000	284.9993

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	18.6	3.7756	0.2231	0.0000	9.3540
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	548.11	111.2614	6.5754	0.0000	275.6454
Total		**115.0370**	**6.7985**	**0.0000**	**284.9993**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	18.6	3.7756	0.2231	0.0000	9.3540
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	548.11	111.2614	6.5754	0.0000	275.6454
Total		**115.0370**	**6.7985**	**0.0000**	**284.9993**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

9309 Sycamore Hills Distribution Center - Passenger Cars

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0
Unrefrigerated Warehouse-No Rail	583.10	1000sqft	15.54	583,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	8.18	Acre	8.18	356,320.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Summer

Project Characteristics - See SWAPE comment regarding CO2, CH4, and N2O intensity factors.

Construction Phase - Total construction length consistent with information provided in the DEIR, but phase lengths are proprotionally altered.

Vehicle Trips - Consistent with the DEIR's model.

Land Use - Consistent with the DEIR's model.

Grading -

Trips and VMT - See SWAPE comment regarding vendor and worker trip numbers.

Architectural Coating - See SWAPE comment regarding architectural coating emission factors.

Fleet Mix - See SWAPE comment regarding operational vehicle fleet mix. Only passenger cars. Trucks reduced to 0; passenger car percentages proportionally altered based on CalEEMod defaults. See construction calculations.

Energy Use -

Water And Wastewater - See SWAPE comment regarding indoor water use rate.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding the PM10 and PM2.5 % reductions.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	740.00	227.00
tblConstructionPhase	NumDays	75.00	46.00
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	PhaseEndDate	11/27/2024	6/29/2022
tblConstructionPhase	PhaseEndDate	6/26/2024	5/12/2022
tblConstructionPhase	PhaseEndDate	8/25/2021	6/29/2021
tblConstructionPhase	PhaseEndDate	9/11/2024	6/6/2022
tblConstructionPhase	PhaseEndDate	5/12/2021	4/26/2021
tblConstructionPhase	PhaseStartDate	9/12/2024	6/7/2022
tblConstructionPhase	PhaseStartDate	8/26/2021	6/30/2021
tblConstructionPhase	PhaseStartDate	5/13/2021	4/27/2021

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Summer

tblConstructionPhase	PhaseStartDate	6/27/2024	5/13/2022
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.20	0.22
tblFleetMix	LDT2	0.20	0.22
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.8630e-003	0.00
tblFleetMix	LHD2	5.8630e-003	0.00
tblFleetMix	MCY	4.8030e-003	0.00
tblFleetMix	MCY	4.8030e-003	0.00
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	8.9600e-004	0.00
tblFleetMix	MH	8.9600e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.0870e-003	0.00
tblFleetMix	OBUS	2.0870e-003	0.00
tblFleetMix	SBUS	7.0800e-004	0.00
tblFleetMix	SBUS	7.0800e-004	0.00
tblFleetMix	UBUS	1.8180e-003	0.00
tblFleetMix	UBUS	1.8180e-003	0.00

tblLandUse	LotAcreage	13.39	15.54
tblVehicleTrips	CC_TL	8.40	24.20
tblVehicleTrips	CC_TL	8.40	24.20
tblVehicleTrips	CNW_TL	6.90	24.20
tblVehicleTrips	CNW_TL	6.90	24.20
tblVehicleTrips	CW_TL	16.60	24.20
tblVehicleTrips	CW_TL	16.60	24.20
tblVehicleTrips	ST_TR	2.46	0.95
tblVehicleTrips	ST_TR	1.68	0.95
tblVehicleTrips	SU_TR	1.05	0.95
tblVehicleTrips	SU_TR	1.68	0.95
tblVehicleTrips	WD_TR	11.03	0.95
tblVehicleTrips	WD_TR	1.68	0.95

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.5678	46.4544	48.9345	0.1726	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	17,572.39 35	17,572.39 35	1.9488	0.0000	17,604.31 29
2022	346.8476	41.9782	46.4269	0.1692	9.4913	0.9109	10.4022	2.5565	0.8566	3.4131	0.0000	17,233.97 30	17,233.97 30	1.2373	0.0000	17,264.90 41
Maximum	**346.8476**	**46.4544**	**48.9345**	**0.1726**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**17,572.39 35**	**17,572.39 35**	**1.9488**	**0.0000**	**17,604.31 29**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.5678	46.4544	48.9345	0.1726	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	17,572.39 35	17,572.39 35	1.9488	0.0000	17,604.31 29
2022	346.8476	41.9782	46.4269	0.1692	9.4913	0.9109	10.4022	2.5565	0.8566	3.4131	0.0000	17,233.97 30	17,233.97 30	1.2373	0.0000	17,264.90 41
Maximum	**346.8476**	**46.4544**	**48.9345**	**0.1726**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**17,572.39 35**	**17,572.39 35**	**1.9488**	**0.0000**	**17,604.31 29**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	1.0029	1.9055	26.1424	0.0969	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,671.1447	9,671.1447	0.2051		9,676.2730
Total	**14.9723**	**2.2426**	**26.4893**	**0.0990**	**9.7838**	**0.0877**	**9.8715**	**2.5936**	**0.0828**	**2.6764**		**10,075.1798**	**10,075.1798**	**0.2132**	**7.4000e-003**	**10,082.7173**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	1.0029	1.9055	26.1424	0.0969	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,671.1447	9,671.1447	0.2051		9,676.2730
Total	**14.9723**	**2.2426**	**26.4893**	**0.0990**	**9.7838**	**0.0877**	**9.8715**	**2.5936**	**0.0828**	**2.6764**		**10,075.1798**	**10,075.1798**	**0.2132**	**7.4000e-003**	**10,082.7173**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/29/2021	5	46	
3	Building Construction	Building Construction	6/30/2021	5/12/2022	5	227	
4	Paving	Paving	5/13/2022	6/6/2022	5	17	
5	Architectural Coating	Architectural Coating	6/7/2022	6/29/2022	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 115

Acres of Paving: 24.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 904,650; Non-Residential Outdoor: 301,550; Striped Parking Area: 63,197 (Architectural Coating – sqft)

OffRoad Equipment

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Summer

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	694.00	271.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	139.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0753	0.0491	0.6758	2.0000e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		199.2417	199.2417	5.3700e-003		199.3759
Total	**0.0753**	**0.0491**	**0.6758**	**2.0000e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**199.2417**	**199.2417**	**5.3700e-003**		**199.3759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0753	0.0491	0.6758	2.0000e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		199.2417	199.2417	5.3700e-003		199.3759
Total	**0.0753**	**0.0491**	**0.6758**	**2.0000e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**199.2417**	**199.2417**	**5.3700e-003**		**199.3759**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.0837**	**0.0546**	**0.7509**	**2.2200e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**221.3797**	**221.3797**	**5.9700e-003**		**221.5288**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.0837**	**0.0546**	**0.7509**	**2.2200e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**221.3797**	**221.3797**	**5.9700e-003**		**221.5288**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7624	25.9529	6.3017	0.0686	1.7341	0.0530	1.7871	0.4992	0.0507	0.5499		7,337.155 6	7,337.155 6	0.4537		7,348.498 4
Worker	2.9045	1.8944	26.0575	0.0771	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,681.874 1	7,681.874 1	0.2071		7,687.050 2
Total	**3.6669**	**27.8474**	**32.3593**	**0.1457**	**9.4914**	**0.1104**	**9.6017**	**2.5565**	**0.1036**	**2.6600**		**15,019.02 96**	**15,019.02 96**	**0.6608**		**15,035.54 86**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7624	25.9529	6.3017	0.0686	1.7341	0.0530	1.7871	0.4992	0.0507	0.5499		7,337.155 6	7,337.155 6	0.4537		7,348.498 4
Worker	2.9045	1.8944	26.0575	0.0771	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,681.874 1	7,681.874 1	0.2071		7,687.050 2
Total	**3.6669**	**27.8474**	**32.3593**	**0.1457**	**9.4914**	**0.1104**	**9.6017**	**2.5565**	**0.1036**	**2.6600**		**15,019.02 96**	**15,019.02 96**	**0.6608**		**15,035.54 86**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7155	24.6511	5.9666	0.0679	1.7341	0.0461	1.7802	0.4992	0.0441	0.5433		7,272.833 2	7,272.833 2	0.4381		7,283.786 3
Worker	2.7248	1.7114	24.0969	0.0743	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		7,406.806 2	7,406.806 2	0.1872		7,411.485 6
Total	**3.4402**	**26.3626**	**30.0635**	**0.1422**	**9.4913**	**0.1019**	**9.5932**	**2.5565**	**0.0955**	**2.6519**		**14,679.63 94**	**14,679.63 94**	**0.6253**		**14,695.27 19**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7155	24.6511	5.9666	0.0679	1.7341	0.0461	1.7802	0.4992	0.0441	0.5433		7,272.833 2	7,272.833 2	0.4381		7,283.786 3
Worker	2.7248	1.7114	24.0969	0.0743	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		7,406.806 2	7,406.806 2	0.1872		7,411.485 6
Total	**3.4402**	**26.3626**	**30.0635**	**0.1422**	**9.4913**	**0.1019**	**9.5932**	**2.5565**	**0.0955**	**2.6519**		**14,679.63 94**	**14,679.63 94**	**0.6253**		**14,695.27 19**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0370	0.5208	1.6100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		160.0895	160.0895	4.0500e-003		160.1906
Total	**0.0589**	**0.0370**	**0.5208**	**1.6100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**160.0895**	**160.0895**	**4.0500e-003**		**160.1906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0370	0.5208	1.6100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		160.0895	160.0895	4.0500e-003		160.1906
Total	**0.0589**	**0.0370**	**0.5208**	**1.6100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**160.0895**	**160.0895**	**4.0500e-003**		**160.1906**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5457	0.3428	4.8263	0.0149	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,483.495 8	1,483.495 8	0.0375		1,484.433 0
Total	**0.5457**	**0.3428**	**4.8263**	**0.0149**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,483.495 8**	**1,483.495 8**	**0.0375**		**1,484.433 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5457	0.3428	4.8263	0.0149	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,483.495 8	1,483.495 8	0.0375		1,484.433 0
Total	**0.5457**	**0.3428**	**4.8263**	**0.0149**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,483.495 8**	**1,483.495 8**	**0.0375**		**1,484.433 0**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0029	1.9055	26.1424	0.0969	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,671.144 7	9,671.144 7	0.2051		9,676.273 0
Unmitigated	1.0029	1.9055	26.1424	0.0969	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,671.144 7	9,671.144 7	0.2051		9,676.273 0

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	19.00	19.00	19.00	136,850	136,850
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	553.95	553.95	553.95	4,550,823	4,550,823
Total	572.95	572.95	572.95	4,687,674	4,687,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	24.20	24.20	24.20	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	24.20	24.20	24.20	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.603018	0.047037	0.220506	0.129439	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Other Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Parking Lot	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.603018	0.047037	0.220506	0.129439	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
NaturalGas Unmitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	190.137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3242.99	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.190137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.24299	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Unmitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

9309 Sycamore Hills Distribution Center - Passenger Cars

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0
Unrefrigerated Warehouse-No Rail	583.10	1000sqft	15.54	583,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	8.18	Acre	8.18	356,320.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Winter

Project Characteristics - See SWAPE comment regarding CO2, CH4, and N2O intensity factors.

Construction Phase - Total construction length consistent with information provided in the DEIR, but phase lengths are proprotionally altered.

Vehicle Trips - Consistent with the DEIR's model.

Land Use - Consistent with the DEIR's model.

Grading -

Trips and VMT - See SWAPE comment regarding vendor and worker trip numbers.

Architectural Coating - See SWAPE comment regarding architectural coating emission factors.

Fleet Mix - See SWAPE comment regarding operational vehicle fleet mix. Only passenger cars. Trucks reduced to 0; passenger car percentages proportionally altered based on CalEEMod defaults. See construction calculations.

Energy Use -

Water And Wastewater - See SWAPE comment regarding indoor water use rate.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding the PM10 and PM2.5 % reductions.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	740.00	227.00
tblConstructionPhase	NumDays	75.00	46.00
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	PhaseEndDate	11/27/2024	6/29/2022
tblConstructionPhase	PhaseEndDate	6/26/2024	5/12/2022
tblConstructionPhase	PhaseEndDate	8/25/2021	6/29/2021
tblConstructionPhase	PhaseEndDate	9/11/2024	6/6/2022
tblConstructionPhase	PhaseEndDate	5/12/2021	4/26/2021
tblConstructionPhase	PhaseStartDate	9/12/2024	6/7/2022
tblConstructionPhase	PhaseStartDate	8/26/2021	6/30/2021
tblConstructionPhase	PhaseStartDate	5/13/2021	4/27/2021

tblConstructionPhase	PhaseStartDate	6/27/2024	5/13/2022
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDA	0.55	0.60
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT1	0.04	0.05
tblFleetMix	LDT2	0.20	0.22
tblFleetMix	LDT2	0.20	0.22
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.8630e-003	0.00
tblFleetMix	LHD2	5.8630e-003	0.00
tblFleetMix	MCY	4.8030e-003	0.00
tblFleetMix	MCY	4.8030e-003	0.00
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MDV	0.12	0.13
tblFleetMix	MH	8.9600e-004	0.00
tblFleetMix	MH	8.9600e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.0870e-003	0.00
tblFleetMix	OBUS	2.0870e-003	0.00
tblFleetMix	SBUS	7.0800e-004	0.00
tblFleetMix	SBUS	7.0800e-004	0.00
tblFleetMix	UBUS	1.8180e-003	0.00
tblFleetMix	UBUS	1.8180e-003	0.00

tblLandUse	LotAcreage	13.39	15.54
tblVehicleTrips	CC_TL	8.40	24.20
tblVehicleTrips	CC_TL	8.40	24.20
tblVehicleTrips	CNW_TL	6.90	24.20
tblVehicleTrips	CNW_TL	6.90	24.20
tblVehicleTrips	CW_TL	16.60	24.20
tblVehicleTrips	CW_TL	16.60	24.20
tblVehicleTrips	ST_TR	2.46	0.95
tblVehicleTrips	ST_TR	1.68	0.95
tblVehicleTrips	SU_TR	1.05	0.95
tblVehicleTrips	SU_TR	1.68	0.95
tblVehicleTrips	WD_TR	11.03	0.95
tblVehicleTrips	WD_TR	1.68	0.95

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.9025	46.4598	47.1669	0.1659	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	16,895.56 24	16,895.56 24	1.9484	0.0000	16,927.92 93
2022	346.9048	42.0701	44.7715	0.1627	9.4913	0.9124	10.4037	2.5565	0.8580	3.4145	0.0000	16,574.82 59	16,574.82 59	1.2548	0.0000	16,606.19 68
Maximum	**346.9048**	**46.4598**	**47.1669**	**0.1659**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**16,895.56 24**	**16,895.56 24**	**1.9484**	**0.0000**	**16,927.92 93**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.9025	46.4598	47.1669	0.1659	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	16,895.56 24	16,895.56 24	1.9484	0.0000	16,927.92 93
2022	346.9048	42.0701	44.7715	0.1627	9.4913	0.9124	10.4037	2.5565	0.8580	3.4145	0.0000	16,574.82 59	16,574.82 59	1.2548	0.0000	16,606.19 68
Maximum	**346.9048**	**46.4598**	**47.1669**	**0.1659**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**16,895.56 24**	**16,895.56 24**	**1.9484**	**0.0000**	**16,927.92 93**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	0.9325	2.0861	23.2541	0.0908	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,064.1882	9,064.1882	0.1904		9,068.9480
Total	**14.9019**	**2.4233**	**23.6010**	**0.0929**	**9.7838**	**0.0877**	**9.8715**	**2.5936**	**0.0828**	**2.6764**		**9,468.2233**	**9,468.2233**	**0.1985**	**7.4000e-003**	**9,475.3924**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	0.9325	2.0861	23.2541	0.0908	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,064.1882	9,064.1882	0.1904		9,068.9480
Total	**14.9019**	**2.4233**	**23.6010**	**0.0929**	**9.7838**	**0.0877**	**9.8715**	**2.5936**	**0.0828**	**2.6764**		**9,468.2233**	**9,468.2233**	**0.1985**	**7.4000e-003**	**9,475.3924**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/29/2021	5	46	
3	Building Construction	Building Construction	6/30/2021	5/12/2022	5	227	
4	Paving	Paving	5/13/2022	6/6/2022	5	17	
5	Architectural Coating	Architectural Coating	6/7/2022	6/29/2022	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 115

Acres of Paving: 24.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 904,650; Non-Residential Outdoor: 301,550; Striped Parking Area: 63,197 (Architectural Coating – sqft)

OffRoad Equipment

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Winter

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	694.00	271.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	139.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0540	0.6118	1.8800e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		186.8672	186.8672	5.0300e-003		186.9929
Total	**0.0830**	**0.0540**	**0.6118**	**1.8800e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**186.8672**	**186.8672**	**5.0300e-003**		**186.9929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0540	0.6118	1.8800e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		186.8672	186.8672	5.0300e-003		186.9929
Total	**0.0830**	**0.0540**	**0.6118**	**1.8800e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**186.8672**	**186.8672**	**5.0300e-003**		**186.9929**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
Total	**0.0922**	**0.0600**	**0.6797**	**2.0800e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**207.6302**	**207.6302**	**5.5800e-003**		**207.7698**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.043 4	6,007.043 4	1.9428		6,055.613 4
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.043 4**	**6,007.043 4**	**1.9428**		**6,055.613 4**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
Total	**0.0922**	**0.0600**	**0.6797**	**2.0800e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**207.6302**	**207.6302**	**5.5800e-003**		**207.7698**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8010	25.8918	7.0050	0.0667	1.7341	0.0547	1.7887	0.4992	0.0523	0.5515		7,137.429 5	7,137.429 5	0.4849		7,149.551 7
Worker	3.2005	2.0805	23.5867	0.0723	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,204.769 0	7,204.769 0	0.1938		7,209.613 4
Total	**4.0015**	**27.9723**	**30.5917**	**0.1390**	**9.4914**	**0.1121**	**9.6034**	**2.5565**	**0.1051**	**2.6616**		**14,342.19 85**	**14,342.19 85**	**0.6787**		**14,359.16 51**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8010	25.8918	7.0050	0.0667	1.7341	0.0547	1.7887	0.4992	0.0523	0.5515		7,137.429 5	7,137.429 5	0.4849		7,149.551 7
Worker	3.2005	2.0805	23.5867	0.0723	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,204.769 0	7,204.769 0	0.1938		7,209.613 4
Total	**4.0015**	**27.9723**	**30.5917**	**0.1390**	**9.4914**	**0.1121**	**9.6034**	**2.5565**	**0.1051**	**2.6616**		**14,342.19 85**	**14,342.19 85**	**0.6787**		**14,359.16 51**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7519	24.5754	6.6347	0.0661	1.7341	0.0476	1.7817	0.4992	0.0455	0.5447		7,073.699 2	7,073.699 2	0.4679		7,085.395 9
Worker	3.0102	1.8791	21.7734	0.0697	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		6,946.793 1	6,946.793 1	0.1750		6,951.168 7
Total	**3.7621**	**26.4544**	**28.4081**	**0.1358**	**9.4913**	**0.1034**	**9.5947**	**2.5565**	**0.0969**	**2.6533**		**14,020.49 23**	**14,020.49 23**	**0.6429**		**14,036.56 46**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7519	24.5754	6.6347	0.0661	1.7341	0.0476	1.7817	0.4992	0.0455	0.5447		7,073.699 2	7,073.699 2	0.4679		7,085.395 9
Worker	3.0102	1.8791	21.7734	0.0697	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		6,946.793 1	6,946.793 1	0.1750		6,951.168 7
Total	**3.7621**	**26.4544**	**28.4081**	**0.1358**	**9.4913**	**0.1034**	**9.5947**	**2.5565**	**0.0969**	**2.6533**		**14,020.49 23**	**14,020.49 23**	**0.6429**		**14,036.56 46**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4706	1.5100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		150.1468	150.1468	3.7800e-003		150.2414
Total	**0.0651**	**0.0406**	**0.4706**	**1.5100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**150.1468**	**150.1468**	**3.7800e-003**		**150.2414**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4706	1.5100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		150.1468	150.1468	3.7800e-003		150.2414
Total	**0.0651**	**0.0406**	**0.4706**	**1.5100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**150.1468**	**150.1468**	**3.7800e-003**		**150.2414**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.6029	0.3764	4.3610	0.0140	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,391.360 6	1,391.360 6	0.0351		1,392.237 0
Total	**0.6029**	**0.3764**	**4.3610**	**0.0140**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,391.360 6**	**1,391.360 6**	**0.0351**		**1,392.237 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.6029	0.3764	4.3610	0.0140	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,391.360 6	1,391.360 6	0.0351		1,392.237 0
Total	**0.6029**	**0.3764**	**4.3610**	**0.0140**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,391.360 6**	**1,391.360 6**	**0.0351**		**1,392.237 0**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

9309 Sycamore Hills Distribution Center - Passenger Cars - South Coast Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9325	2.0861	23.2541	0.0908	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,064.188 2	9,064.188 2	0.1904		9,068.948 0
Unmitigated	0.9325	2.0861	23.2541	0.0908	9.7838	0.0619	9.8457	2.5936	0.0570	2.6506		9,064.188 2	9,064.188 2	0.1904		9,068.948 0

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	19.00	19.00	19.00	136,850	136,850
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	553.95	553.95	553.95	4,550,823	4,550,823
Total	572.95	572.95	572.95	4,687,674	4,687,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	24.20	24.20	24.20	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	24.20	24.20	24.20	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.603018	0.047037	0.220506	0.129439	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Other Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Parking Lot	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.603018	0.047037	0.220506	0.129439	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
NaturalGas Unmitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	190.137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3242.99	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.190137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.24299	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Unmitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

9309 Sycamore Hills Distribution Center - Trucks

South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0
Unrefrigerated Warehouse-No Rail	583.10	1000sqft	15.54	583,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	8.18	Acre	8.18	356,320.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

9309 Sycamore Hills Distribution Center - Trucks - South Coast Air Basin, Annual

Project Characteristics - See SWAPE comment regarding CO2, CH4, and N2O intensity factors.

Land Use - Consistent with the DEIR's model.

Construction Phase - Total construction length consistent with information provided in the DEIR, but phase lengths are proprotionally altered.

Trips and VMT - See SWAPE comment regarding vendor and worker trip numbers.

Grading -

Architectural Coating - See SWAPE comment regarding architectural coating emission factors.

Vehicle Trips - Consistent with the DEIR's model.

Energy Use -

Water And Wastewater - See SWAPE comment regarding indoor water use rate.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding the PM10 and PM2.5 % reductions.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Fleet Mix - See SWAPE comment regarding operational vehicle fleet mix. Only trucks. Passenger cars reduced to 0; truck percentages proportionally altered based on CalEEMod defaults. See construction calculations.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	NumDays	75.00	46.00
tblConstructionPhase	NumDays	740.00	227.00
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	55.00	17.00
tblFleetMix	HHD	0.03	0.42
tblFleetMix	HHD	0.03	0.42
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LDT2	0.20	0.00

tblFleetMix	LHD1	0.02	0.21
tblFleetMix	LHD1	0.02	0.21
tblFleetMix	LHD2	5.8630e-003	0.08
tblFleetMix	LHD2	5.8630e-003	0.08
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MHD	0.02	0.29
tblFleetMix	MHD	0.02	0.29
tblLandUse	LotAcreage	13.39	15.54
tblVehicleTrips	CC_TL	8.40	38.70
tblVehicleTrips	CC_TL	8.40	38.70
tblVehicleTrips	CNW_TL	6.90	38.70
tblVehicleTrips	CNW_TL	6.90	38.70
tblVehicleTrips	CW_TL	16.60	38.70
tblVehicleTrips	CW_TL	16.60	38.70
tblVehicleTrips	ST_TR	2.46	0.45
tblVehicleTrips	ST_TR	1.68	0.45
tblVehicleTrips	SU_TR	1.05	0.45
tblVehicleTrips	SU_TR	1.68	0.45
tblVehicleTrips	WD_TR	11.03	0.45
tblVehicleTrips	WD_TR	1.68	0.45

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5040	4.4881	4.0782	0.0130	0.9888	0.1353	1.1241	0.3412	0.1259	0.4670	0.0000	1,194.498 1	1,194.498 1	0.1277	0.0000	1,197.690 1
2022	3.2316	2.1106	2.2983	8.1000e-003	0.4525	0.0485	0.5010	0.1220	0.0455	0.1675	0.0000	747.5735	747.5735	0.0589	0.0000	749.0453
Maximum	**3.2316**	**4.4881**	**4.0782**	**0.0130**	**0.9888**	**0.1353**	**1.1241**	**0.3412**	**0.1259**	**0.4670**	**0.0000**	**1,194.498 1**	**1,194.498 1**	**0.1277**	**0.0000**	**1,197.690 1**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.5040	4.4881	4.0782	0.0130	0.9888	0.1353	1.1241	0.3412	0.1259	0.4670	0.0000	1,194.497 7	1,194.497 7	0.1277	0.0000	1,197.689 8
2022	3.2316	2.1106	2.2983	8.1000e-003	0.4525	0.0485	0.5010	0.1220	0.0455	0.1675	0.0000	747.5733	747.5733	0.0589	0.0000	749.0451
Maximum	**3.2316**	**4.4881**	**4.0782**	**0.0130**	**0.9888**	**0.1353**	**1.1241**	**0.3412**	**0.1259**	**0.4670**	**0.0000**	**1,194.497 7**	**1,194.497 7**	**0.1277**	**0.0000**	**1,197.689 8**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2021**	**6-30-2021**	1.5910	1.5910
2	**7-1-2021**	**9-30-2021**	1.6707	1.6707
3	**10-1-2021**	**12-31-2021**	1.6858	1.6858
4	**1-1-2022**	**3-31-2022**	1.5280	1.5280
5	**4-1-2022**	**6-30-2022**	3.7137	3.7137
		Highest	3.7137	3.7137

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Energy	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	1,083.8134	1,083.8134	0.0235	5.8300e-003	1,086.1385
Mobile	0.4499	10.6977	3.8328	0.0458	1.5784	0.0437	1.6222	0.4512	0.0418	0.4930	0.0000	4,429.3925	4,429.3925	0.2134	0.0000	4,434.7270
Waste						0.0000	0.0000		0.0000	0.0000	115.0370	0.0000	115.0370	6.7985	0.0000	284.9993
Water						0.0000	0.0000		0.0000	0.0000	43.9068	1,098.1427	1,142.0495	4.5337	0.1115	1,288.6044
Total	**2.9990**	**10.7592**	**3.8925**	**0.0462**	**1.5784**	**0.0484**	**1.6269**	**0.4512**	**0.0465**	**0.4977**	**158.9439**	**6,611.3641**	**6,770.3079**	**11.5691**	**0.1173**	**7,094.4859**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Energy	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	1,083.8134	1,083.8134	0.0235	5.8300e-003	1,086.1385
Mobile	0.4499	10.6977	3.8328	0.0458	1.5784	0.0437	1.6222	0.4512	0.0418	0.4930	0.0000	4,429.3925	4,429.3925	0.2134	0.0000	4,434.7270
Waste						0.0000	0.0000		0.0000	0.0000	115.0370	0.0000	115.0370	6.7985	0.0000	284.9993
Water						0.0000	0.0000		0.0000	0.0000	43.9068	1,098.1427	1,142.0495	4.5337	0.1115	1,288.6044
Total	**2.9990**	**10.7592**	**3.8925**	**0.0462**	**1.5784**	**0.0484**	**1.6269**	**0.4512**	**0.0465**	**0.4977**	**158.9439**	**6,611.3641**	**6,770.3079**	**11.5691**	**0.1173**	**7,094.4859**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/29/2021	5	46	
3	Building Construction	Building Construction	6/30/2021	5/12/2022	5	227	
4	Paving	Paving	5/13/2022	6/6/2022	5	17	
5	Architectural Coating	Architectural Coating	6/7/2022	6/29/2022	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 115

Acres of Paving: 24.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 904,650; Non-Residential Outdoor: 301,550; Striped Parking Area: 63,197 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	694.00	271.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	139.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1626	0.0000	0.1626	0.0894	0.0000	0.0894	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0350	0.3645	0.1904	3.4000e-004		0.0184	0.0184		0.0169	0.0169	0.0000	30.0922	30.0922	9.7300e-003	0.0000	30.3355
Total	**0.0350**	**0.3645**	**0.1904**	**3.4000e-004**	**0.1626**	**0.0184**	**0.1810**	**0.0894**	**0.0169**	**0.1063**	**0.0000**	**30.0922**	**30.0922**	**9.7300e-003**	**0.0000**	**30.3355**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.6500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5498	1.5498	4.0000e-005	0.0000	1.5508
Total	**6.7000e-004**	**5.0000e-004**	**5.6500e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5498**	**1.5498**	**4.0000e-005**	**0.0000**	**1.5508**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1626	0.0000	0.1626	0.0894	0.0000	0.0894	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0350	0.3645	0.1904	3.4000e-004		0.0184	0.0184		0.0169	0.0169	0.0000	30.0921	30.0921	9.7300e-003	0.0000	30.3354
Total	**0.0350**	**0.3645**	**0.1904**	**3.4000e-004**	**0.1626**	**0.0184**	**0.1810**	**0.0894**	**0.0169**	**0.1063**	**0.0000**	**30.0921**	**30.0921**	**9.7300e-003**	**0.0000**	**30.3354**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	5.0000e-004	5.6500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5498	1.5498	4.0000e-005	0.0000	1.5508
Total	**6.7000e-004**	**5.0000e-004**	**5.6500e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5498**	**1.5498**	**4.0000e-005**	**0.0000**	**1.5508**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1995	0.0000	0.1995	0.0827	0.0000	0.0827	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0964	1.0672	0.7102	1.4300e-003		0.0457	0.0457		0.0420	0.0420	0.0000	125.3385	125.3385	0.0405	0.0000	126.3519
Total	**0.0964**	**1.0672**	**0.7102**	**1.4300e-003**	**0.1995**	**0.0457**	**0.2452**	**0.0827**	**0.0420**	**0.1247**	**0.0000**	**125.3385**	**125.3385**	**0.0405**	**0.0000**	**126.3519**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9100e-003	1.4200e-003	0.0161	5.0000e-005	5.0500e-003	4.0000e-005	5.0800e-003	1.3400e-003	4.0000e-005	1.3800e-003	0.0000	4.4006	4.4006	1.2000e-004	0.0000	4.4036
Total	**1.9100e-003**	**1.4200e-003**	**0.0161**	**5.0000e-005**	**5.0500e-003**	**4.0000e-005**	**5.0800e-003**	**1.3400e-003**	**4.0000e-005**	**1.3800e-003**	**0.0000**	**4.4006**	**4.4006**	**1.2000e-004**	**0.0000**	**4.4036**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1995	0.0000	0.1995	0.0827	0.0000	0.0827	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0964	1.0672	0.7102	1.4300e-003		0.0457	0.0457		0.0420	0.0420	0.0000	125.3383	125.3383	0.0405	0.0000	126.3517
Total	**0.0964**	**1.0672**	**0.7102**	**1.4300e-003**	**0.1995**	**0.0457**	**0.2452**	**0.0827**	**0.0420**	**0.1247**	**0.0000**	**125.3383**	**125.3383**	**0.0405**	**0.0000**	**126.3517**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9100e-003	1.4200e-003	0.0161	5.0000e-005	5.0500e-003	4.0000e-005	5.0800e-003	1.3400e-003	4.0000e-005	1.3800e-003	0.0000	4.4006	4.4006	1.2000e-004	0.0000	4.4036
Total	**1.9100e-003**	**1.4200e-003**	**0.0161**	**5.0000e-005**	**5.0500e-003**	**4.0000e-005**	**5.0800e-003**	**1.3400e-003**	**4.0000e-005**	**1.3800e-003**	**0.0000**	**4.4006**	**4.4006**	**1.2000e-004**	**0.0000**	**4.4036**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1264	1.1592	1.1023	1.7900e-003		0.0638	0.0638		0.0599	0.0599	0.0000	154.0388	154.0388	0.0372	0.0000	154.9679
Total	**0.1264**	**1.1592**	**1.1023**	**1.7900e-003**		**0.0638**	**0.0638**		**0.0599**	**0.0599**	**0.0000**	**154.0388**	**154.0388**	**0.0372**	**0.0000**	**154.9679**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0518	1.7530	0.4430	4.5100e-003	0.1136	3.5700e-003	0.1171	0.0328	3.4100e-003	0.0362	0.0000	437.5739	437.5739	0.0282	0.0000	438.2791
Worker	0.1918	0.1424	1.6106	4.8800e-003	0.5063	3.8200e-003	0.5102	0.1345	3.5200e-003	0.1380	0.0000	441.5045	441.5045	0.0119	0.0000	441.8015
Total	**0.2436**	**1.8953**	**2.0537**	**9.3900e-003**	**0.6199**	**7.3900e-003**	**0.6273**	**0.1672**	**6.9300e-003**	**0.1742**	**0.0000**	**879.0783**	**879.0783**	**0.0401**	**0.0000**	**880.0806**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1264	1.1592	1.1023	1.7900e-003		0.0638	0.0638		0.0599	0.0599	0.0000	154.0386	154.0386	0.0372	0.0000	154.9677
Total	**0.1264**	**1.1592**	**1.1023**	**1.7900e-003**		**0.0638**	**0.0638**		**0.0599**	**0.0599**	**0.0000**	**154.0386**	**154.0386**	**0.0372**	**0.0000**	**154.9677**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0518	1.7530	0.4430	4.5100e-003	0.1136	3.5700e-003	0.1171	0.0328	3.4100e-003	0.0362	0.0000	437.5739	437.5739	0.0282	0.0000	438.2791
Worker	0.1918	0.1424	1.6106	4.8800e-003	0.5063	3.8200e-003	0.5102	0.1345	3.5200e-003	0.1380	0.0000	441.5045	441.5045	0.0119	0.0000	441.8015
Total	**0.2436**	**1.8953**	**2.0537**	**9.3900e-003**	**0.6199**	**7.3900e-003**	**0.6273**	**0.1672**	**6.9300e-003**	**0.1742**	**0.0000**	**879.0783**	**879.0783**	**0.0401**	**0.0000**	**880.0806**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0802	0.7339	0.7691	1.2700e-003		0.0380	0.0380		0.0358	0.0358	0.0000	108.9109	108.9109	0.0261	0.0000	109.5632
Total	**0.0802**	**0.7339**	**0.7691**	**1.2700e-003**		**0.0380**	**0.0380**		**0.0358**	**0.0358**	**0.0000**	**108.9109**	**108.9109**	**0.0261**	**0.0000**	**109.5632**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0344	1.1756	0.2965	3.1600e-003	0.0803	2.2000e-003	0.0825	0.0232	2.1000e-003	0.0253	0.0000	306.5308	306.5308	0.0192	0.0000	307.0119
Worker	0.1273	0.0909	1.0512	3.3300e-003	0.3579	2.6200e-003	0.3605	0.0950	2.4100e-003	0.0975	0.0000	300.8641	300.8641	7.5900e-003	0.0000	301.0537
Total	**0.1617**	**1.2665**	**1.3476**	**6.4900e-003**	**0.4381**	**4.8200e-003**	**0.4429**	**0.1182**	**4.5100e-003**	**0.1227**	**0.0000**	**607.3949**	**607.3949**	**0.0268**	**0.0000**	**608.0656**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0802	0.7339	0.7691	1.2700e-003		0.0380	0.0380		0.0358	0.0358	0.0000	108.9107	108.9107	0.0261	0.0000	109.5630
Total	**0.0802**	**0.7339**	**0.7691**	**1.2700e-003**		**0.0380**	**0.0380**		**0.0358**	**0.0358**	**0.0000**	**108.9107**	**108.9107**	**0.0261**	**0.0000**	**109.5630**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0344	1.1756	0.2965	3.1600e-003	0.0803	2.2000e-003	0.0825	0.0232	2.1000e-003	0.0253	0.0000	306.5308	306.5308	0.0192	0.0000	307.0119
Worker	0.1273	0.0909	1.0512	3.3300e-003	0.3579	2.6200e-003	0.3605	0.0950	2.4100e-003	0.0975	0.0000	300.8641	300.8641	7.5900e-003	0.0000	301.0537
Total	**0.1617**	**1.2665**	**1.3476**	**6.4900e-003**	**0.4381**	**4.8200e-003**	**0.4429**	**0.1182**	**4.5100e-003**	**0.1227**	**0.0000**	**607.3949**	**607.3949**	**0.0268**	**0.0000**	**608.0656**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3700e-003	0.0946	0.1239	1.9000e-004		4.8300e-003	4.8300e-003		4.4400e-003	4.4400e-003	0.0000	17.0234	17.0234	5.5100e-003	0.0000	17.1611
Paving	0.0317					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0411**	**0.0946**	**0.1239**	**1.9000e-004**		**4.8300e-003**	**4.8300e-003**		**4.4400e-003**	**4.4400e-003**	**0.0000**	**17.0234**	**17.0234**	**5.5100e-003**	**0.0000**	**17.1611**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	4.1100e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1760	1.1760	3.0000e-005	0.0000	1.1768
Total	**5.0000e-004**	**3.6000e-004**	**4.1100e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1760**	**1.1760**	**3.0000e-005**	**0.0000**	**1.1768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3700e-003	0.0946	0.1239	1.9000e-004		4.8300e-003	4.8300e-003		4.4400e-003	4.4400e-003	0.0000	17.0234	17.0234	5.5100e-003	0.0000	17.1611
Paving	0.0317					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0411**	**0.0946**	**0.1239**	**1.9000e-004**		**4.8300e-003**	**4.8300e-003**		**4.4400e-003**	**4.4400e-003**	**0.0000**	**17.0234**	**17.0234**	**5.5100e-003**	**0.0000**	**17.1611**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.6000e-004	4.1100e-003	1.0000e-005	1.4000e-003	1.0000e-005	1.4100e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.1760	1.1760	3.0000e-005	0.0000	1.1768
Total	**5.0000e-004**	**3.6000e-004**	**4.1100e-003**	**1.0000e-005**	**1.4000e-003**	**1.0000e-005**	**1.4100e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.1760**	**1.1760**	**3.0000e-005**	**0.0000**	**1.1768**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.9418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0120	0.0154	3.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	2.1703	2.1703	1.4000e-004	0.0000	2.1738
Total	**2.9436**	**0.0120**	**0.0154**	**3.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.4000e-004**	**0.0000**	**2.1738**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6100e-003	3.2900e-003	0.0381	1.2000e-004	0.0130	9.0000e-005	0.0131	3.4400e-003	9.0000e-005	3.5300e-003	0.0000	10.8980	10.8980	2.7000e-004	0.0000	10.9049
Total	**4.6100e-003**	**3.2900e-003**	**0.0381**	**1.2000e-004**	**0.0130**	**9.0000e-005**	**0.0131**	**3.4400e-003**	**9.0000e-005**	**3.5300e-003**	**0.0000**	**10.8980**	**10.8980**	**2.7000e-004**	**0.0000**	**10.9049**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.9418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7400e-003	0.0120	0.0154	3.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	2.1703	2.1703	1.4000e-004	0.0000	2.1738
Total	**2.9436**	**0.0120**	**0.0154**	**3.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.1703**	**2.1703**	**1.4000e-004**	**0.0000**	**2.1738**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6100e-003	3.2900e-003	0.0381	1.2000e-004	0.0130	9.0000e-005	0.0131	3.4400e-003	9.0000e-005	3.5300e-003	0.0000	10.8980	10.8980	2.7000e-004	0.0000	10.9049
Total	**4.6100e-003**	**3.2900e-003**	**0.0381**	**1.2000e-004**	**0.0130**	**9.0000e-005**	**0.0131**	**3.4400e-003**	**9.0000e-005**	**3.5300e-003**	**0.0000**	**10.8980**	**10.8980**	**2.7000e-004**	**0.0000**	**10.9049**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4499	10.6977	3.8328	0.0458	1.5784	0.0437	1.6222	0.4512	0.0418	0.4930	0.0000	4,429.392 5	4,429.392 5	0.2134	0.0000	4,434.727 0
Unmitigated	0.4499	10.6977	3.8328	0.0458	1.5784	0.0437	1.6222	0.4512	0.0418	0.4930	0.0000	4,429.392 5	4,429.392 5	0.2134	0.0000	4,434.727 0

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	9.00	9.00	9.00	103,657	103,657
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	262.40	262.40	262.40	3,447,092	3,447,092
Total	271.40	271.40	271.40	3,550,749	3,550,749

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	38.70	38.70	38.70	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	38.70	38.70	38.70	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.000000	0.000000	0.000000	0.000000	0.210000	0.080000	0.290000	0.420000	0.002087	0.001818	0.004803	0.000708	0.000896
Other Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Parking Lot	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.210000	0.080000	0.290000	0.420000	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,016.943 6	1,016.943 6	0.0223	4.6000e-003	1,018.871 4
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,016.943 6	1,016.943 6	0.0223	4.6000e-003	1,018.871 4
NaturalGas Mitigated	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	66.8698	66.8698	1.2800e-003	1.2300e-003	67.2672
NaturalGas Unmitigated	6.7600e-003	0.0614	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003	0.0000	66.8698	66.8698	1.2800e-003	1.2300e-003	67.2672

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	69400	3.7000e-004	3.4000e-003	2.8600e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7035	3.7035	7.0000e-005	7.0000e-005	3.7255
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.18369e+006	6.3800e-003	0.0580	0.0487	3.5000e-004		4.4100e-003	4.4100e-003		4.4100e-003	4.4100e-003	0.0000	63.1664	63.1664	1.2100e-003	1.1600e-003	63.5417
Total		**6.7500e-003**	**0.0614**	**0.0516**	**3.7000e-004**		**4.6700e-003**	**4.6700e-003**		**4.6700e-003**	**4.6700e-003**	**0.0000**	**66.8698**	**66.8698**	**1.2800e-003**	**1.2300e-003**	**67.2672**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	69400	3.7000e-004	3.4000e-003	2.8600e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7035	3.7035	7.0000e-005	7.0000e-005	3.7255
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.18369e+006	6.3800e-003	0.0580	0.0487	3.5000e-004		4.4100e-003	4.4100e-003		4.4100e-003	4.4100e-003	0.0000	63.1664	63.1664	1.2100e-003	1.1600e-003	63.5417
Total		**6.7500e-003**	**0.0614**	**0.0516**	**3.7000e-004**		**4.6700e-003**	**4.6700e-003**		**4.6700e-003**	**4.6700e-003**	**0.0000**	**66.8698**	**66.8698**	**1.2800e-003**	**1.2300e-003**	**67.2672**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	190400	114.4884	2.5000e-003	5.2000e-004	114.7055
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	124712	74.9901	1.6400e-003	3.4000e-004	75.1322
Unrefrigerated Warehouse-No Rail	1.37612e+006	827.4651	0.0181	3.7500e-003	829.0337
Total		**1,016.9436**	**0.0222**	**4.6100e-003**	**1,018.8714**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	190400	114.4884	2.5000e-003	5.2000e-004	114.7055
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	124712	74.9901	1.6400e-003	3.4000e-004	75.1322
Unrefrigerated Warehouse-No Rail	1.37612e+006	827.4651	0.0181	3.7500e-003	829.0337
Total		**1,016.9436**	**0.0222**	**4.6100e-003**	**1,018.8714**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Unmitigated	2.5423	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2474					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5000e-004	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Total	**2.5423**	**7.0000e-005**	**8.0200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0156**	**0.0156**	**4.0000e-005**	**0.0000**	**0.0166**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.2474					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.5000e-004	7.0000e-005	8.0200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0156	0.0156	4.0000e-005	0.0000	0.0166
Total	**2.5423**	**7.0000e-005**	**8.0200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0156**	**0.0156**	**4.0000e-005**	**0.0000**	**0.0166**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,142.049 5	4.5337	0.1115	1,288.604 4
Unmitigated	1,142.049 5	4.5337	0.1115	1,288.604 4

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	3.55467 / 2.17867	43.5140	0.1168	2.9300e-003	47.3051
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	134.842 / 0	1,098.535 5	4.4169	0.1085	1,241.299 3
Total		**1,142.049 5**	**4.5337**	**0.1115**	**1,288.604 4**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	3.55467 / 2.17867	43.5140	0.1168	2.9300e-003	47.3051
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	134.842 / 0	1,098.5355	4.4169	0.1085	1,241.2993
Total		**1,142.0495**	**4.5337**	**0.1115**	**1,288.6044**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	115.0370	6.7985	0.0000	284.9993
Unmitigated	115.0370	6.7985	0.0000	284.9993

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	18.6	3.7756	0.2231	0.0000	9.3540
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	548.11	111.2614	6.5754	0.0000	275.6454
Total		**115.0370**	**6.7985**	**0.0000**	**284.9993**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	18.6	3.7756	0.2231	0.0000	9.3540
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	548.11	111.2614	6.5754	0.0000	275.6454
Total		**115.0370**	**6.7985**	**0.0000**	**284.9993**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

9309 Sycamore Hills Distribution Center - Trucks

South Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0
Unrefrigerated Warehouse-No Rail	583.10	1000sqft	15.54	583,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	8.18	Acre	8.18	356,320.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See SWAPE comment regarding CO2, CH4, and N2O intensity factors.

Land Use - Consistent with the DEIR's model.

Construction Phase - Total construction length consistent with information provided in the DEIR, but phase lengths are proprotionally altered.

Trips and VMT - See SWAPE comment regarding vendor and worker trip numbers.

Grading -

Architectural Coating - See SWAPE comment regarding architectural coating emission factors.

Vehicle Trips - Consistent with the DEIR's model.

Energy Use -

Water And Wastewater - See SWAPE comment regarding indoor water use rate.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding the PM10 and PM2.5 % reductions.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Fleet Mix - See SWAPE comment regarding operational vehicle fleet mix. Only trucks. Passenger cars reduced to 0; truck percentages proportionally altered based on CalEEMod defaults. See construction calculations.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	NumDays	75.00	46.00
tblConstructionPhase	NumDays	740.00	227.00
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	55.00	17.00
tblFleetMix	HHD	0.03	0.42
tblFleetMix	HHD	0.03	0.42
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LDT2	0.20	0.00

tblFleetMix	LHD1	0.02	0.21
tblFleetMix	LHD1	0.02	0.21
tblFleetMix	LHD2	5.8630e-003	0.08
tblFleetMix	LHD2	5.8630e-003	0.08
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MHD	0.02	0.29
tblFleetMix	MHD	0.02	0.29
tblLandUse	LotAcreage	13.39	15.54
tblVehicleTrips	CC_TL	8.40	38.70
tblVehicleTrips	CC_TL	8.40	38.70
tblVehicleTrips	CNW_TL	6.90	38.70
tblVehicleTrips	CNW_TL	6.90	38.70
tblVehicleTrips	CW_TL	16.60	38.70
tblVehicleTrips	CW_TL	16.60	38.70
tblVehicleTrips	ST_TR	2.46	0.45
tblVehicleTrips	ST_TR	1.68	0.45
tblVehicleTrips	SU_TR	1.05	0.45
tblVehicleTrips	SU_TR	1.68	0.45
tblVehicleTrips	WD_TR	11.03	0.45
tblVehicleTrips	WD_TR	1.68	0.45

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.5678	46.4544	48.9345	0.1726	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	17,572.39 35	17,572.39 35	1.9488	0.0000	17,604.31 29
2022	346.8476	41.9782	46.4269	0.1692	9.4913	0.9109	10.4022	2.5565	0.8566	3.4131	0.0000	17,233.97 30	17,233.97 30	1.2373	0.0000	17,264.90 41
Maximum	**346.8476**	**46.4544**	**48.9345**	**0.1726**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**17,572.39 35**	**17,572.39 35**	**1.9488**	**0.0000**	**17,604.31 29**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.5678	46.4544	48.9345	0.1726	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	17,572.39 35	17,572.39 35	1.9488	0.0000	17,604.31 29
2022	346.8476	41.9782	46.4269	0.1692	9.4913	0.9109	10.4022	2.5565	0.8566	3.4131	0.0000	17,233.97 30	17,233.97 30	1.2373	0.0000	17,264.90 41
Maximum	**346.8476**	**46.4544**	**48.9345**	**0.1726**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**17,572.39 35**	**17,572.39 35**	**1.9488**	**0.0000**	**17,604.31 29**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	2.4590	56.3797	20.8658	0.2525	8.8096	0.2400	9.0496	2.5129	0.2295	2.7423		26,928.9898	26,928.9898	1.2837		26,961.0823
Total	**16.4284**	**56.7169**	**21.2127**	**0.2545**	**8.8096**	**0.2658**	**9.0754**	**2.5129**	**0.2553**	**2.7681**		**27,333.0249**	**27,333.0249**	**1.2918**	**7.4000e-003**	**27,367.5266**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	2.4590	56.3797	20.8658	0.2525	8.8096	0.2400	9.0496	2.5129	0.2295	2.7423		26,928.9898	26,928.9898	1.2837		26,961.0823
Total	**16.4284**	**56.7169**	**21.2127**	**0.2545**	**8.8096**	**0.2658**	**9.0754**	**2.5129**	**0.2553**	**2.7681**		**27,333.0249**	**27,333.0249**	**1.2918**	**7.4000e-003**	**27,367.5266**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/29/2021	5	46	
3	Building Construction	Building Construction	6/30/2021	5/12/2022	5	227	
4	Paving	Paving	5/13/2022	6/6/2022	5	17	
5	Architectural Coating	Architectural Coating	6/7/2022	6/29/2022	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 115

Acres of Paving: 24.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 904,650; Non-Residential Outdoor: 301,550; Striped Parking Area: 63,197 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	694.00	271.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	139.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0753	0.0491	0.6758	2.0000e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		199.2417	199.2417	5.3700e-003		199.3759
Total	**0.0753**	**0.0491**	**0.6758**	**2.0000e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**199.2417**	**199.2417**	**5.3700e-003**		**199.3759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0753	0.0491	0.6758	2.0000e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		199.2417	199.2417	5.3700e-003		199.3759
Total	**0.0753**	**0.0491**	**0.6758**	**2.0000e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**199.2417**	**199.2417**	**5.3700e-003**		**199.3759**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.0837**	**0.0546**	**0.7509**	**2.2200e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**221.3797**	**221.3797**	**5.9700e-003**		**221.5288**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0546	0.7509	2.2200e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		221.3797	221.3797	5.9700e-003		221.5288
Total	**0.0837**	**0.0546**	**0.7509**	**2.2200e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**221.3797**	**221.3797**	**5.9700e-003**		**221.5288**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7624	25.9529	6.3017	0.0686	1.7341	0.0530	1.7871	0.4992	0.0507	0.5499		7,337.155 6	7,337.155 6	0.4537		7,348.498 4
Worker	2.9045	1.8944	26.0575	0.0771	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,681.874 1	7,681.874 1	0.2071		7,687.050 2
Total	**3.6669**	**27.8474**	**32.3593**	**0.1457**	**9.4914**	**0.1104**	**9.6017**	**2.5565**	**0.1036**	**2.6600**		**15,019.02 96**	**15,019.02 96**	**0.6608**		**15,035.54 86**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.363 9	2,553.363 9	0.6160		2,568.764 3
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.363 9**	**2,553.363 9**	**0.6160**		**2,568.764 3**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7624	25.9529	6.3017	0.0686	1.7341	0.0530	1.7871	0.4992	0.0507	0.5499		7,337.155 6	7,337.155 6	0.4537		7,348.498 4
Worker	2.9045	1.8944	26.0575	0.0771	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,681.874 1	7,681.874 1	0.2071		7,687.050 2
Total	**3.6669**	**27.8474**	**32.3593**	**0.1457**	**9.4914**	**0.1104**	**9.6017**	**2.5565**	**0.1036**	**2.6600**		**15,019.02 96**	**15,019.02 96**	**0.6608**		**15,035.54 86**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7155	24.6511	5.9666	0.0679	1.7341	0.0461	1.7802	0.4992	0.0441	0.5433		7,272.833 2	7,272.833 2	0.4381		7,283.786 3
Worker	2.7248	1.7114	24.0969	0.0743	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		7,406.806 2	7,406.806 2	0.1872		7,411.485 6
Total	**3.4402**	**26.3626**	**30.0635**	**0.1422**	**9.4913**	**0.1019**	**9.5932**	**2.5565**	**0.0955**	**2.6519**		**14,679.63 94**	**14,679.63 94**	**0.6253**		**14,695.27 19**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7155	24.6511	5.9666	0.0679	1.7341	0.0461	1.7802	0.4992	0.0441	0.5433		7,272.833 2	7,272.833 2	0.4381		7,283.786 3
Worker	2.7248	1.7114	24.0969	0.0743	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		7,406.806 2	7,406.806 2	0.1872		7,411.485 6
Total	**3.4402**	**26.3626**	**30.0635**	**0.1422**	**9.4913**	**0.1019**	**9.5932**	**2.5565**	**0.0955**	**2.6519**		**14,679.63 94**	**14,679.63 94**	**0.6253**		**14,695.27 19**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0370	0.5208	1.6100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		160.0895	160.0895	4.0500e-003		160.1906
Total	**0.0589**	**0.0370**	**0.5208**	**1.6100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**160.0895**	**160.0895**	**4.0500e-003**		**160.1906**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0589	0.0370	0.5208	1.6100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		160.0895	160.0895	4.0500e-003		160.1906
Total	**0.0589**	**0.0370**	**0.5208**	**1.6100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**160.0895**	**160.0895**	**4.0500e-003**		**160.1906**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5457	0.3428	4.8263	0.0149	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,483.495 8	1,483.495 8	0.0375		1,484.433 0
Total	**0.5457**	**0.3428**	**4.8263**	**0.0149**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,483.495 8**	**1,483.495 8**	**0.0375**		**1,484.433 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5457	0.3428	4.8263	0.0149	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,483.495 8	1,483.495 8	0.0375		1,484.433 0
Total	**0.5457**	**0.3428**	**4.8263**	**0.0149**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,483.495 8**	**1,483.495 8**	**0.0375**		**1,484.433 0**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4590	56.3797	20.8658	0.2525	8.8096	0.2400	9.0496	2.5129	0.2295	2.7423		26,928.98 98	26,928.98 98	1.2837		26,961.08 23
Unmitigated	2.4590	56.3797	20.8658	0.2525	8.8096	0.2400	9.0496	2.5129	0.2295	2.7423		26,928.98 98	26,928.98 98	1.2837		26,961.08 23

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	9.00	9.00	9.00	103,657	103,657
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	262.40	262.40	262.40	3,447,092	3,447,092
Total	271.40	271.40	271.40	3,550,749	3,550,749

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	38.70	38.70	38.70	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	38.70	38.70	38.70	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

9309 Sycamore Hills Distribution Center - Trucks - South Coast Air Basin, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.000000	0.000000	0.000000	0.000000	0.210000	0.080000	0.290000	0.420000	0.002087	0.001818	0.004803	0.000708	0.000896
Other Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Parking Lot	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.210000	0.080000	0.290000	0.420000	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
NaturalGas Unmitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	190.137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3242.99	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.190137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.24299	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Unmitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

9309 Sycamore Hills Distribution Center - Trucks

South Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	20.00	1000sqft	0.46	20,000.00	0
Unrefrigerated Warehouse-No Rail	583.10	1000sqft	15.54	583,100.00	0
Other Asphalt Surfaces	16.00	Acre	16.00	696,960.00	0
Parking Lot	8.18	Acre	8.18	356,320.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	10			**Operational Year**	2022
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See SWAPE comment regarding CO2, CH4, and N2O intensity factors.

Land Use - Consistent with the DEIR's model.

Construction Phase - Total construction length consistent with information provided in the DEIR, but phase lengths are proprotionally altered.

Trips and VMT - See SWAPE comment regarding vendor and worker trip numbers.

Grading -

Architectural Coating - See SWAPE comment regarding architectural coating emission factors.

Vehicle Trips - Consistent with the DEIR's model.

Energy Use -

Water And Wastewater - See SWAPE comment regarding indoor water use rate.

Construction Off-road Equipment Mitigation - See SWAPE comment regarding the PM10 and PM2.5 % reductions.

Mobile Land Use Mitigation - See SWAPE comment regarding operational mitigation measures.

Fleet Mix - See SWAPE comment regarding operational vehicle fleet mix. Only trucks. Passenger cars reduced to 0; truck percentages proportionally altered based on CalEEMod defaults. See construction calculations.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	30.00	18.00
tblConstructionPhase	NumDays	75.00	46.00
tblConstructionPhase	NumDays	740.00	227.00
tblConstructionPhase	NumDays	55.00	17.00
tblConstructionPhase	NumDays	55.00	17.00
tblFleetMix	HHD	0.03	0.42
tblFleetMix	HHD	0.03	0.42
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LDT2	0.20	0.00

tblFleetMix	LHD1	0.02	0.21
tblFleetMix	LHD1	0.02	0.21
tblFleetMix	LHD2	5.8630e-003	0.08
tblFleetMix	LHD2	5.8630e-003	0.08
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MHD	0.02	0.29
tblFleetMix	MHD	0.02	0.29
tblLandUse	LotAcreage	13.39	15.54
tblVehicleTrips	CC_TL	8.40	38.70
tblVehicleTrips	CC_TL	8.40	38.70
tblVehicleTrips	CNW_TL	6.90	38.70
tblVehicleTrips	CNW_TL	6.90	38.70
tblVehicleTrips	CW_TL	16.60	38.70
tblVehicleTrips	CW_TL	16.60	38.70
tblVehicleTrips	ST_TR	2.46	0.45
tblVehicleTrips	ST_TR	1.68	0.45
tblVehicleTrips	SU_TR	1.05	0.45
tblVehicleTrips	SU_TR	1.68	0.45
tblVehicleTrips	WD_TR	11.03	0.45
tblVehicleTrips	WD_TR	1.68	0.45

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.9025	46.4598	47.1669	0.1659	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	16,895.56 24	16,895.56 24	1.9484	0.0000	16,927.92 93
2022	346.9048	42.0701	44.7715	0.1627	9.4913	0.9124	10.4037	2.5565	0.8580	3.4145	0.0000	16,574.82 59	16,574.82 59	1.2548	0.0000	16,606.19 68
Maximum	**346.9048**	**46.4598**	**47.1669**	**0.1659**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**16,895.56 24**	**16,895.56 24**	**1.9484**	**0.0000**	**16,927.92 93**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.9025	46.4598	47.1669	0.1659	18.2675	2.0460	20.3134	9.9840	1.8823	11.8663	0.0000	16,895.56 24	16,895.56 24	1.9484	0.0000	16,927.92 93
2022	346.9048	42.0701	44.7715	0.1627	9.4913	0.9124	10.4037	2.5565	0.8580	3.4145	0.0000	16,574.82 59	16,574.82 59	1.2548	0.0000	16,606.19 68
Maximum	**346.9048**	**46.4598**	**47.1669**	**0.1659**	**18.2675**	**2.0460**	**20.3134**	**9.9840**	**1.8823**	**11.8663**	**0.0000**	**16,895.56 24**	**16,895.56 24**	**1.9484**	**0.0000**	**16,927.92 93**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	2.4902	57.8286	21.3241	0.2510	8.8096	0.2413	9.0508	2.5129	0.2307	2.7435		26,762.9547	26,762.9547	1.3075		26,795.6411
Total	**16.4596**	**58.1658**	**21.6709**	**0.2530**	**8.8096**	**0.2671**	**9.0766**	**2.5129**	**0.2565**	**2.7693**		**27,166.9898**	**27,166.9898**	**1.3156**	**7.4000e-003**	**27,202.0855**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Energy	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
Mobile	2.4902	57.8286	21.3241	0.2510	8.8096	0.2413	9.0508	2.5129	0.2307	2.7435		26,762.9547	26,762.9547	1.3075		26,795.6411
Total	**16.4596**	**58.1658**	**21.6709**	**0.2530**	**8.8096**	**0.2671**	**9.0766**	**2.5129**	**0.2565**	**2.7693**		**27,166.9898**	**27,166.9898**	**1.3156**	**7.4000e-003**	**27,202.0855**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/26/2021	5	18	
2	Grading	Grading	4/27/2021	6/29/2021	5	46	
3	Building Construction	Building Construction	6/30/2021	5/12/2022	5	227	
4	Paving	Paving	5/13/2022	6/6/2022	5	17	
5	Architectural Coating	Architectural Coating	6/7/2022	6/29/2022	5	17	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 115

Acres of Paving: 24.18

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 904,650; Non-Residential Outdoor: 301,550; Striped Parking Area: 63,197 (Architectural Coating – sqft)

OffRoad Equipment

9309 Sycamore Hills Distribution Center - Trucks - South Coast Air Basin, Winter

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	694.00	271.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	139.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.656 9	3,685.656 9	1.1920		3,715.457 3
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.656 9**	**3,685.656 9**	**1.1920**		**3,715.457 3**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0540	0.6118	1.8800e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		186.8672	186.8672	5.0300e-003		186.9929
Total	**0.0830**	**0.0540**	**0.6118**	**1.8800e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**186.8672**	**186.8672**	**5.0300e-003**		**186.9929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0540	0.6118	1.8800e-003	0.2012	1.4900e-003	0.2027	0.0534	1.3700e-003	0.0547		186.8672	186.8672	5.0300e-003		186.9929
Total	**0.0830**	**0.0540**	**0.6118**	**1.8800e-003**	**0.2012**	**1.4900e-003**	**0.2027**	**0.0534**	**1.3700e-003**	**0.0547**		**186.8672**	**186.8672**	**5.0300e-003**		**186.9929**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
Total	**0.0922**	**0.0600**	**0.6797**	**2.0800e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**207.6302**	**207.6302**	**5.5800e-003**		**207.7698**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**8.6733**	**1.9853**	**10.6587**	**3.5965**	**1.8265**	**5.4230**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0922	0.0600	0.6797	2.0800e-003	0.2236	1.6500e-003	0.2252	0.0593	1.5200e-003	0.0608		207.6302	207.6302	5.5800e-003		207.7698
Total	**0.0922**	**0.0600**	**0.6797**	**2.0800e-003**	**0.2236**	**1.6500e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**207.6302**	**207.6302**	**5.5800e-003**		**207.7698**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8010	25.8918	7.0050	0.0667	1.7341	0.0547	1.7887	0.4992	0.0523	0.5515		7,137.4295	7,137.4295	0.4849		7,149.5517
Worker	3.2005	2.0805	23.5867	0.0723	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,204.7690	7,204.7690	0.1938		7,209.6134
Total	**4.0015**	**27.9723**	**30.5917**	**0.1390**	**9.4914**	**0.1121**	**9.6034**	**2.5565**	**0.1051**	**2.6616**		**14,342.1985**	**14,342.1985**	**0.6787**		**14,359.1651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.8010	25.8918	7.0050	0.0667	1.7341	0.0547	1.7887	0.4992	0.0523	0.5515		7,137.429 5	7,137.429 5	0.4849		7,149.551 7
Worker	3.2005	2.0805	23.5867	0.0723	7.7573	0.0574	7.8147	2.0573	0.0529	2.1101		7,204.769 0	7,204.769 0	0.1938		7,209.613 4
Total	**4.0015**	**27.9723**	**30.5917**	**0.1390**	**9.4914**	**0.1121**	**9.6034**	**2.5565**	**0.1051**	**2.6616**		**14,342.19 85**	**14,342.19 85**	**0.6787**		**14,359.16 51**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7519	24.5754	6.6347	0.0661	1.7341	0.0476	1.7817	0.4992	0.0455	0.5447		7,073.699 2	7,073.699 2	0.4679		7,085.395 9
Worker	3.0102	1.8791	21.7734	0.0697	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		6,946.793 1	6,946.793 1	0.1750		6,951.168 7
Total	**3.7621**	**26.4544**	**28.4081**	**0.1358**	**9.4913**	**0.1034**	**9.5947**	**2.5565**	**0.0969**	**2.6533**		**14,020.49 23**	**14,020.49 23**	**0.6429**		**14,036.56 46**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.333 6	2,554.333 6	0.6120		2,569.632 2
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.333 6**	**2,554.333 6**	**0.6120**		**2,569.632 2**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7519	24.5754	6.6347	0.0661	1.7341	0.0476	1.7817	0.4992	0.0455	0.5447		7,073.699 2	7,073.699 2	0.4679		7,085.395 9
Worker	3.0102	1.8791	21.7734	0.0697	7.7573	0.0558	7.8131	2.0573	0.0514	2.1086		6,946.793 1	6,946.793 1	0.1750		6,951.168 7
Total	**3.7621**	**26.4544**	**28.4081**	**0.1358**	**9.4913**	**0.1034**	**9.5947**	**2.5565**	**0.0969**	**2.6533**		**14,020.49 23**	**14,020.49 23**	**0.6429**		**14,036.56 46**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4706	1.5100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		150.1468	150.1468	3.7800e-003		150.2414
Total	**0.0651**	**0.0406**	**0.4706**	**1.5100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**150.1468**	**150.1468**	**3.7800e-003**		**150.2414**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	3.7266					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.8294**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0651	0.0406	0.4706	1.5100e-003	0.1677	1.2100e-003	0.1689	0.0445	1.1100e-003	0.0456		150.1468	150.1468	3.7800e-003		150.2414
Total	**0.0651**	**0.0406**	**0.4706**	**1.5100e-003**	**0.1677**	**1.2100e-003**	**0.1689**	**0.0445**	**1.1100e-003**	**0.0456**		**150.1468**	**150.1468**	**3.7800e-003**		**150.2414**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.6029	0.3764	4.3610	0.0140	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,391.360 6	1,391.360 6	0.0351		1,392.237 0
Total	**0.6029**	**0.3764**	**4.3610**	**0.0140**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,391.360 6**	**1,391.360 6**	**0.0351**		**1,392.237 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	346.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**346.3019**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.6029	0.3764	4.3610	0.0140	1.5537	0.0112	1.5649	0.4121	0.0103	0.4223		1,391.3606	1,391.3606	0.0351		1,392.2370
Total	**0.6029**	**0.3764**	**4.3610**	**0.0140**	**1.5537**	**0.0112**	**1.5649**	**0.4121**	**0.0103**	**0.4223**		**1,391.3606**	**1,391.3606**	**0.0351**		**1,392.2370**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4902	57.8286	21.3241	0.2510	8.8096	0.2413	9.0508	2.5129	0.2307	2.7435		26,762.95 47	26,762.95 47	1.3075		26,795.64 11
Unmitigated	2.4902	57.8286	21.3241	0.2510	8.8096	0.2413	9.0508	2.5129	0.2307	2.7435		26,762.95 47	26,762.95 47	1.3075		26,795.64 11

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	9.00	9.00	9.00	103,657	103,657
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	262.40	262.40	262.40	3,447,092	3,447,092
Total	271.40	271.40	271.40	3,550,749	3,550,749

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	38.70	38.70	38.70	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	38.70	38.70	38.70	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.000000	0.000000	0.000000	0.000000	0.210000	0.080000	0.290000	0.420000	0.002087	0.001818	0.004803	0.000708	0.000896
Other Asphalt Surfaces	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Parking Lot	0.552111	0.043066	0.201891	0.118512	0.015605	0.005863	0.021387	0.031253	0.002087	0.001818	0.004803	0.000708	0.000896
Unrefrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.210000	0.080000	0.290000	0.420000	0.002087	0.001818	0.004803	0.000708	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980
NaturalGas Unmitigated	0.0370	0.3366	0.2827	2.0200e-003		0.0256	0.0256		0.0256	0.0256		403.8978	403.8978	7.7400e-003	7.4000e-003	406.2980

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	190.137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3242.99	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.190137	2.0500e-003	0.0186	0.0157	1.1000e-004		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003		22.3691	22.3691	4.3000e-004	4.1000e-004	22.5020
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	3.24299	0.0350	0.3179	0.2671	1.9100e-003		0.0242	0.0242		0.0242	0.0242		381.5288	381.5288	7.3100e-003	6.9900e-003	383.7960
Total		**0.0370**	**0.3366**	**0.2827**	**2.0200e-003**		**0.0256**	**0.0256**		**0.0256**	**0.0256**		**403.8978**	**403.8978**	**7.7400e-003**	**7.4000e-003**	**406.2980**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Unmitigated	13.9324	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.6120					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	12.3145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.9700e-003	5.9000e-004	0.0641	0.0000		2.3000e-004	2.3000e-004		2.3000e-004	2.3000e-004		0.1373	0.1373	3.6000e-004		0.1463
Total	**13.9324**	**5.9000e-004**	**0.0641**	**0.0000**		**2.3000e-004**	**2.3000e-004**		**2.3000e-004**	**2.3000e-004**		**0.1373**	**0.1373**	**3.6000e-004**		**0.1463**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Construction				
2021			**Total**	
Annual Emissions (tons/year)	0.1311		Total DPM (lbs)	253.2460274
Daily Emissions (lbs/day)	0.718356164		Total DPM (g)	114872.398
Construction Duration (days)	274		Total Construction Days	455
Total DPM (lbs)	196.829589		Emission Rate (g/s)	0.00292207
Total DPM (g)	89281.90159		Release Height (meters)	3
Start Date	4/1/2021		Initial Vertical Dimension (meters)	1.5
End Date	12/31/2021		Max Horizontal (meters)	505.0
Construction Days	274		Min Horizontal (meters)	98.0
2022			Total Acreage	12.22923452
Annual Emissions (tons/year)	0.0572		Setting	Urban
Daily Emissions (lbs/day)	0.313424658		Population	326,414
Construction Duration (days)	180		Start Date	4/1/2021
Total DPM (lbs)	56.41643836		End Date	6/30/2022
Total DPM (g)	25590.49644		Total Construction Days	455
Start Date	1/1/2022		Total Years of Operation	28.75
End Date	6/30/2022			
Construction Days	180			

```
Start date and time  07/19/21 19:06:33

                                AERSCREEN 16216

SycamoreHills_Construction

            SycamoreHills_Construction

         -----------------  DATA ENTRY VALIDATION  -----------------
                         METRIC              ENGLISH
 ** AREADATA **  ---------------     ----------------

 Emission Rate:    0.292E-02 g/s         0.232E-01 lb/hr
 Area Height:           3.00 meters           9.84 feet
 Area Source Length:  505.00 meters        1656.82 feet
 Area Source Width:    98.00 meters         321.52 feet
 Vertical Dimension:    1.50 meters           4.92 feet
 Model Mode:           URBAN
 Population:          326414
 Dist to Ambient Air:           1.0 meters            3. feet

 ** BUILDING DATA **
```

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters   0.0 feet

Probe distance: 5000. meters   16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature: 250.0 / 310.0 K   -9.7 / 98.3 Deg F

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

SycamoreHills_Construction.out

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

****

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

```
Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season            Albedo     Bo       zo

Winter             0.35     1.50     1.000

Spring             0.14     1.00     1.000

Summer             0.16     2.00     1.000

Autumn             0.18     2.00     1.000


Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl


Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl


Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl


Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl


Buildings and/or terrain present or rectangular area source, skipping probe


FLOWSECTOR   started 07/19/21 19:08:06
 ********************************************


  Running AERMOD
 Processing Winter


Processing surface roughness sector  1
```

```
*****************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
*****************************************************

Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector  15


    ********   WARNING MESSAGES   ********

               ***  NONE  ***

 ********************************************


  Running AERMOD

 Processing Spring


Processing surface roughness sector  1


*****************************************************

Processing wind flow sector   1


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   0


    ********   WARNING MESSAGES   ********

               ***  NONE  ***


*****************************************************

Processing wind flow sector   2
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector   5


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


************************************************
Processing wind flow sector   3


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  10


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


************************************************
Processing wind flow sector   4


 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector  15


    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ****************************************


  Running AERMOD
 Processing Summer
```

```
Processing surface roughness sector  1

**************************************************
Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   2

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
```

```
**************************************************

Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***
 ******************************************

  Running AERMOD
 Processing Autumn

Processing surface roughness sector  1

**************************************************

Processing wind flow sector   1

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

**************************************************

Processing wind flow sector   2
```

```
 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector   5

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   3

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  10

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

*****************************************************
Processing wind flow sector   4

 AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector  15

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

FLOWSECTOR   ended 07/19/21 19:08:34

REFINE       started 07/19/21 19:08:34
```

```
 AERMOD Finishes Successfully for REFINE stage 3 Winter sector   0

    ********   WARNING MESSAGES   ********
               ***  NONE  ***

REFINE       ended 07/19/21 19:08:39

 **********************************************
 AERSCREEN Finished Successfully
 With no errors or warnings
 Check log file for details
 ***********************************************

 Ending date and time  07/19/21 19:08:44
```

```
 Concentration     Distance Elevation  Diag  Season/Month  Zo sector      Date      H0     U*     W*  DT/DZ ZICNV
ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS     HT  REF TA    HT
  0.20502E+01       1.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.21029E+01      25.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.21525E+01      50.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.21974E+01      75.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.22328E+01     100.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.22691E+01     125.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.23024E+01     150.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.23333E+01     175.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.23617E+01     200.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.23884E+01     225.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.24139E+01     250.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
* 0.24160E+01     253.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.18435E+01     275.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.14642E+01     300.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.12253E+01     325.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.10514E+01     350.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.88597E+00     375.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.79340E+00     400.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.71746E+00     425.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.65308E+00     450.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.59907E+00     475.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.55220E+00     500.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.51169E+00     525.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.47649E+00     550.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.44528E+00     575.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.41738E+00     600.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
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1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.39246E+00      625.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.37017E+00      650.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.35012E+00      675.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.33181E+00      700.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.31507E+00      725.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.29981E+00      750.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.28584E+00      775.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.27302E+00      800.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.26120E+00      825.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.25028E+00      850.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.24017E+00      875.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.23071E+00      900.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.22183E+00      925.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.21355E+00      950.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.20580E+00      975.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.19851E+00     1000.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.19167E+00     1025.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.18524E+00     1050.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.17919E+00     1075.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.17347E+00     1100.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.16808E+00     1125.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.16298E+00     1150.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.15814E+00     1175.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.15356E+00     1200.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.14921E+00     1225.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.14507E+00     1250.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0    2.0
  0.14111E+00     1275.00      0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
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1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.13733E+00     1300.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.13372E+00     1325.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.13027E+00     1350.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.12698E+00     1375.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.12383E+00     1400.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.12082E+00     1425.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.11793E+00     1450.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.11516E+00     1475.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.11251E+00     1500.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.10996E+00     1525.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.10751E+00     1550.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.10516E+00     1575.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.10289E+00     1600.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.10071E+00     1625.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.98610E-01     1650.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.96586E-01     1675.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.94633E-01     1700.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.92749E-01     1725.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.90930E-01     1750.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.89172E-01     1775.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.87474E-01     1800.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.85832E-01     1825.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.84243E-01     1850.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.82698E-01     1875.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.81201E-01     1900.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.79752E-01     1925.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.78347E-01     1950.00     0.00  0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
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1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.76985E-01     1975.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.75664E-01     2000.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.74382E-01     2025.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.73138E-01     2050.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.71929E-01     2075.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.70755E-01     2100.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.69615E-01     2125.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.68503E-01     2150.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.67418E-01     2175.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.66362E-01     2200.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.65334E-01     2225.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.64334E-01     2250.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.63360E-01     2275.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.62364E-01     2300.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.61447E-01     2325.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.60553E-01     2350.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.59682E-01     2375.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.58833E-01     2400.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.58003E-01     2425.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.57194E-01     2450.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.56405E-01     2475.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.55634E-01     2500.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.54881E-01     2525.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.54146E-01     2550.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.53427E-01     2575.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.52725E-01     2600.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.52038E-01     2625.00     0.00   0.0     Winter     0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
```

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1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.51367E-01     2650.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.50711E-01     2675.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.50069E-01     2700.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.49442E-01     2725.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.48827E-01     2750.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.48226E-01     2775.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.47638E-01     2800.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.47061E-01     2825.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.46497E-01     2850.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.45945E-01     2875.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.45403E-01     2900.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.44873E-01     2925.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.44353E-01     2950.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.43844E-01     2975.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.43344E-01     3000.00     0.00  5.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.42855E-01     3025.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.42375E-01     3050.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.41904E-01     3075.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.41442E-01     3100.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.40989E-01     3125.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.40544E-01     3150.00     0.00  5.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.40108E-01     3175.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.39680E-01     3200.00     0.00  5.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.39259E-01     3225.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.38846E-01     3250.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.38441E-01     3275.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.38043E-01     3300.00     0.00  0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
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1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.37652E-01    3325.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.37268E-01    3350.00    0.00  5.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.36891E-01    3375.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.36520E-01    3400.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.36156E-01    3425.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.35798E-01    3450.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.35446E-01    3475.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.35100E-01    3500.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.34759E-01    3525.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.34425E-01    3550.00    0.00  5.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.34096E-01    3575.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.33772E-01    3600.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.33454E-01    3625.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.33141E-01    3650.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.32833E-01    3675.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.32530E-01    3700.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.32231E-01    3725.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.31937E-01    3750.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.31649E-01    3775.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.31364E-01    3800.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.31084E-01    3825.00    0.00  5.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.30808E-01    3850.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.30536E-01    3875.00    0.00  5.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.30269E-01    3900.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.30005E-01    3925.00    0.00  5.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.29746E-01    3950.00    0.00  0.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.29490E-01    3975.00    0.00  5.0    Winter    0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.     6.0
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1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.29238E-01     4000.00     0.00  10.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.28990E-01     4025.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.28745E-01     4050.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.28504E-01     4075.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.28267E-01     4100.00     0.00  10.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.28033E-01     4125.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.27802E-01     4150.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.27574E-01     4175.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.27350E-01     4200.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.27129E-01     4225.00     0.00   5.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.26911E-01     4250.00     0.00  10.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.26696E-01     4275.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.26484E-01     4300.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.26275E-01     4325.00     0.00   5.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.26068E-01     4350.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.25865E-01     4375.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.25664E-01     4400.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.25466E-01     4425.00     0.00  10.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.25270E-01     4450.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.25077E-01     4475.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.24887E-01     4500.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.24699E-01     4525.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.24513E-01     4550.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.24330E-01     4575.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.24149E-01     4600.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.23971E-01     4625.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
1.000  1.50  0.35   0.50  10.0  310.0   2.0
  0.23795E-01     4650.00     0.00   0.0      Winter      0-360   10011001   -1.30  0.043 -9.000  0.020 -999.   21.      6.0
```

1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.23621E-01   4675.00   0.00 15.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.23449E-01   4700.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.23280E-01   4725.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.23113E-01   4750.00   0.00   5.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.22947E-01   4775.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.22784E-01   4800.00   0.00   5.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.22622E-01   4825.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.22463E-01   4850.00   0.00   5.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.22306E-01   4875.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.22150E-01   4900.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.21996E-01   4924.99   0.00 15.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.21845E-01   4950.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.21695E-01   4975.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0
 0.21546E-01   5000.00   0.00   0.0   Winter   0-360   10011001   -1.30 0.043 -9.000 0.020 -999.   21.   6.0
1.000   1.50   0.35   0.50   10.0   310.0   2.0

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Matthew F. Hagemann, P.G.,* C.Hg**

Geologic and Hydrogeologic Characterization, Investigation and Remediation Strategies

Expert Testimony

Industrial Stormwater Compliance

CEQA Review

Professional Certifications:

*Professional Geologist
**Certified Hydrogeologist

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist
California Certified Hydrogeologist

Professional Experience:

30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. Spent nine years with the U.S. EPA in the Resource Conservation Recovery Act (RCRA) and

Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater. While with EPA, served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. Led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, developed extensive client relationships and has managed complex projects that include consultations as an expert witness and a regulatory specialist, and managing projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions held include:

Government:

- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Geologist, U.S. Forest Service (1986 – 1998)

Educational:

- Geology Instructor, Golden West College, 2010 – 2104, 2017;
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);

Private Sector:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);
- Executive Director, Orange Coast Watch (2001 – 2004);
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, responsibilities have included:

- Lead analyst and testifying expert, for both plaintiffs and defendants, in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards.

- Recommending additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce exposure to hazards from toxins.
- Stormwater analysis, sampling and best management practice evaluation, for both government agencies and corporate clients, at more than 150 industrial facilities.
- Serving as expert witness for both plaintiffs and defendants in cases including contamination of groundwater, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns, for both government agencies and corporate clients.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Lead author for a multi-volume remedial investigation report for an

operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, an Orange County-based not-for-profit water-quality organization, led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities included:

- Leading efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiating a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identifying emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. Used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. Prepared geologic reports, conducted hearings, and responded to public comments from residents who were very concerned about the impact of designation.
- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Served as a hydrogeologist with the RCRA Hazardous Waste program. Duties included:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
    - Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.

- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation- wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served as senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advising the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaping EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improving the technical training of EPA's scientific and engineering staff.
- Earning an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Establishing national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities included:

- Mapping geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinating research with community stakeholders who were concerned with natural resource protection.
- Characterizing the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervising year-long effort for soil and groundwater sampling.
- Conducting aquifer tests.
  - Investigating active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.
- Part time geology instructor at Golden West College in Huntington Beach, California from 2010 to 2014 and in 2017.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the PublicEnvironmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S.EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making andPublic Participation. Brownfields 2005, Denver, Coloradao.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins atschools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBEReleases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells.
Presentation to the Ground Water and Environmental Law Conference, National

Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in

Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F**. 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui,October 1996.

Hagemann, M. F., Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu,
Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Airand Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Cleanup at Closing Military Basesin California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce ofPrevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:
Selected as subject matter expert for the California Professional Geologist licensing examinations,2009-2011.

SWAPE Technical Consultation, Data Analysis and Litigation Support for the Environment

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Paul Rosenfeld, Ph.D.

Chemical Fate and Transport & Air Dispersion Modeling

Principal Environmental Chemist

Risk Assessment And Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on VOC filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld is the environmental chemist at Soil Water Air Protection Enterprise (SWAPE). His focus is the fate and transport of environmental contaminants, risk assessment, and ecological restoration. His project experience ranges from monitoring and modeling of pollution sources as they relate to human and ecological health. Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing, petroleum, MtBE and fuel oxygenates, chlorinated solvents, pesticides, radioactive waste, PCBs, PAHs, dioxins, furans, volatile organics, semi-volatile organics, perchlorate, heavy metals, asbestos, PFOA, unusual polymers, and odor. Significant projects performed by Dr. Rosenfeld include the following:

Litigation Support

Client: Nexsen Pruet, LLC (Charleston, South Carolina)
Serving as expert in chlorine exposure in railroad tank car accident where approximately 120,000 pounds of chlorine were released.

Client: Buzbee Law Firm (Houston, Texas)
Serving as expert in catalyst release and refinery emissions cases against BP Texas City. One case settled regarding worker exposure, but ongoing litigation remains involving ~21,500 plaintiffs who have health claims and are seeking remediation from chemicals released from BP facility.

Client: Girardi Keese (Los Angeles, California)

Serving as expert investigating hydrocarbon exposure and property damage for ~600 individuals and ~280 properties in Carson, California, where homes were constructed above a large tank farm formerly owned by Shell.

Client: Brent Coon Law Firm (Cleveland, Ohio)
Served as expert calculating an environmental exposure to benzene, PAHs, and VOCs from a Chevron Refinery in Hooven Ohio. Ran AERMOD to calculate cumulative dose.

Client: Girardi Keese (Los Angeles, California)
Served as expert testifying on hydrocarbon exposure to a woman who worked on a fuel barge operated by Chevron. Demonstrated that the plaintiff was exposed to excessive amounts of benzene.

Client: Lundy Davis (Lake Charles, Louisiana)
Served as consulting expert on an oil field case representing the lease holder of a contaminated oil field. Conducted field work evaluating oil field contamination in Sulfur, Louisiana. Property is owned by Conoco Phillips, but leased by Yellow Rock, a small oil firm.

Client: Cox Cox Filo (Lake Charles, Louisiana)
Serving as testifying expert on multimillion gallon oil spill in Lake Charles which occurred on June 19, 2006, resulting in hydrocarbon vapor exposure to hundreds of workers and residents. Prepared air model and calculated dose. Demonstrated that petroleum odor alone can result in significant health harms.

Client: Cotchett Pitre & McCarthy (San Francisco, California)
Served as testifying expert representing homeowners who unknowingly purchased homes built on an old oil field in Santa Maria, California. Properties have high concentrations of petroleum hydrocarbons in subsurface soils resulting in diminished property value.

Client: Baron & Budd (Dallas, Texas) & Weitz & Luxenberg (New York, NY)
Serving as consulting expert in MTBE Federal Multi District Litigation (MDL) in New York. Consolidated ground water data, created maps for test cases, constructed damage model, evaluated taste and odor threshold levels.

Client: Law Offices Of Anthony Liberatore P.C. (Los Angeles, California)
Served as testifying expert representing individuals who rented homes on the Inglewood Oil Field in California. Plaintiffs were exposed to hydrocarbon contaminated water and air, and experienced health harms associated with the petroleum exposure.

Client: Baron & Budd P.C. Dallas Texas and Korein Tillery (Madison, County)
Illinois, Private Wells Analysis: Coordinated data acquisition and GIS analysis evaluating private well proximity to leaking underground storage tanks to support litigation noting that private well owners should be compensated for MTBE testing.

Client: Orange County District Attorney (Orange County, California)

Coordinated a review of 143 ARCO gas stations in Orange County to assist the District Attorney's prosecution of CCR Title 23 and California Health and Safety Code violators.

Client: Environmental Litigation Group (Birmingham, Alabama)

Serving as testifying expert in a health effects case against ABC Coke/Drummond Co for polluting a community with PAHs, benzene, particulate matter, heavy metals, and coke oven emissions. Created air dispersions models and conducted attic dust sampling, exposure modeling, and risk assessment for plaintiffs.

Client: Masry Vitatoe (Westlake Village, CA), Engstrom Lipscomb Lack (Los Angeles, CA) & Baron & Budd (Dallas Texas).

Served as consulting expert in Proposition 65 lawsuit filed against the major oil companies for benzene and toluene releases from gas stations and refineries which contaminated groundwater. Settlement included over $110 million dollars in injunctive relief.

Client: Tommy Franks Law Firm (Austin, Texas)

Served as expert evaluating groundwater contamination which resulted from the hazardous waste injection program and negligent actions of Morton Thiokol and Rohm Hass. Interpreted drinking water contamination and community exposure.

Client: Baron & Budd (Dallas Texas) and Sher Leff (San Francisco, California)

Serving as consulting expert for several California cities which have filed defective product cases against Dow Chemical and Shell for 1,2,3-trichloropropane groundwater contamination. Generated maps showing capture zones of impacted wells for various municipalities.

Client: Baron & Budd (Dallas Texas) and Korein Tillery (Madison County, Illinois)

Serving as consulting expert for a Class Action defective product Atrazine claim filed in Madison County, Illinois against Syngenta and five other manufactures. The plaintiff class representative is Holiday Shores Water System which is evaluating health issues associated with atrazine, costing out treatment for filtration of public drinking water supplies.

Client: Weitz & Luxenberg (New York, NY)

Serving as expert on Property Damage and Nuisance claims resulting from emissions from the Countywide Landfill in Ohio. The landfill had an exothermic reaction or fire resulting from aluminum dross dumping, and the EPA fined the landfill $10,000,000 dollars.

Client: Baron & Budd (Dallas Texas)

Serving as consulting expert for a groundwater contamination case in Pensacola Florida where fluorinated compounds contaminated wells operated by Escambia County.

Client: Environmental Litigation Group (Birmingham, Alabama)

Serving as an expert on property damage, medical monitoring and toxic tort claims that have been filed on behalf of over 12,000 plaintiffs who were exposed to PCBs and dioxins/furans resulting from emissions from Monsanto and Cerro Copper's operations in East Sauget, Illinois.

Client: Environmental Litigation Group (Birmingham, Alabama)
Served as an expert on groundwater case when Exxon Mobil and Helena Chemical released ethylene dichloride into groundwater resulting in a large plume. Prepared report on the appropriate treatment technology and cost, and flaws with the proposed on site remedy.

Client: Environmental Litigation Group (Birmingham, Alabama)
Serving as an expert on air emissions released when a Bartlo Packaging Incorporated facility in West Helena Arkansas exploded resulting in community exposure to pesticides and smoke from combustion of pesticides.

Client: Omara & Padilla (San Diego, Califorinia)
Served as testifying expert on nuisance case against Nutro Dogfood Company that constructed a large dog food processing facility in the middle of a residential community in Victorville California with no odor control devices. The facility has undergone significant modifications including installation of a regenerative thermal oxidizer.

Client: Environmental Litigation Group (Birmingham, Alabama)
Serving as an expert on property damage and medical monitoring claims that have been filed against International Paper resulting from chemical emissions from facilities located in Bastrop Louisiana, Prattville, Alabama, and Georgetown South Carolina.

Client: Estep and Shafer (West Virginia)
Served as expert running various air models to calculate acid emissions dose to residents resulting from emissions from a coal fired power plant in West Virginia.

Client: Watts Law Firm (Austin, Texas), Woodfill Pressler (Houston, Texas), Woska & Ass. (Oklahoma)
Served as testifying expert on community and worker exposure to CCA, creosote, PAHs, and dioxins/furans from a BNSF and Kopper's Facility in Somerville, Texas. Conducted field sampling, risk assessment, dose assessment and air modelling to quantify exposure to workers and community members.

Client: Environmental Litigation Group (Birmingham, Alabama)
Served as expert regarding community exposure to CCA, creosote, PAHs, and dioxins/furans from a Louisiana Pacific wood treatment facility in Florala, Alabama. Conducted blood sampling and environmental sampling to determine environmental exposure to dioxins/furans and PAHs.

Client: Sanders Law (Colorado Springs, Co) and Vamvoras & Schwartzberg (Lake Charles, Louisiana)
Serving as expert calculating chemical exposure to over 500 workers from large ethylene dichloride spill in Lake Charles, Louisiana, at the Conoco Phillips Refinery.

Client: Baron & Budd P.C. (Dallas, Texas)

Served as consulting expert in a defective product lawsuit against Dow Agroscience focusing on Clopyralid, a recalcitrant herbicide that damaged numerous compost facilities across the United States.

Client: Sullivan Papain Block McGrath & Cannavo (NY, NY) and The Cochran Firm (Dothan, MS)
Served as expert regarding community exposure to metals, PAHs PCBs, and dioxins/furans from the burning of Ford Paint Sludge and municipal solid waste in Ringwood, New Jersey.

Client: Rose, Klein Marias (Los Angeles, CA)
Serving as expert in Proposition 65 cases, each one citing an individual facility in the Port of Oakland. Prepared air dispersion and risk models to demonstrate that each facility emits diesel particulate matter that results in risks exceeding 1/100,000, hence violating the Proposition 65 Statute.

Client: Rose, Klein Marias (Los Angeles, CA)
Serving as expert in 55 Proposition 65 cases, each one citing an individual facility in the Port of Los Angeles and Port of Long Beach as the defendant. Prepared air dispersion and risk models to demonstrate that each facility emits diesel particulate matter that results in risks exceeding 1/100,000, hence violating the Proposition 65 Statute.

Client: Graham & Associates (Calabasas, CA)
Served as expert in a case in which General Motors is the plaintiff and BP Arco is the defendant. Conducted air models to demonstrate that sulfur emissions from the BP Arco facility formed sulfuric acid, destroying paint on over 350 automobiles.

Client: Rose, Klien Marias (Los Angeles, CA) and Environmental Law Foundation (San Francisco, CA)
Served as expert in a Proposition 65 case against potato chip manufacturers. Conducted an analysis of several brands of potato chips for acrylamide concentration and found that all samples exceeded Proposition 65 No Significant Risk Levels.

Client: Gonzales & Robinson (Westlake Village, CA)
Served as testifying expert in a toxic tort case against Chevron (Ortho) for allowing a community to be contaminated with lead arsenate pesticide. Created air dispersion models, soil vadose zone transport models, and evaluated bioaccumulation of lead arsenate in food.

Client: Environment Now (Santa Monica, CA)
Served as expert for Environment Now to convince the State of California to file a nuisance claim against the automobile manufactures to recover MediCal damages from expenditures on asthma-related health care costs.

Client: Trutanich Michell (Long Beach, California)
Served as expert representing San Pedro Boat Works in the Port of Los Angeles. Prepared air dispersion, particulate air dispersion, and storm water discharge models to demonstrate that Kaiser Bulk Loading is responsible for copper concentrate accumulating in the bay sediment.

Client: Azurix of North America (Fort Myers, Florida)

Provided expert opinions, reports and research pertaining to a proposed County Ordinance requiring biosolids applicators to measure VOC and odor concentrations at application sites' boundaries.

Client: MCP Polyurethane (Pittsburg, Kansas)
Provided expert opinions and reports regarding metal-laden landfill runoff that damaged a running track by causing the reversion of the polyurethane due to its catalytic properties.

Risk Assessment And Modeling

Client: ABT-Haskell (San Bernardino, California)
Prepared air dispersion model for a proposed state-of-the-art enclosed compost facility. Developed odor detection limits to predict 1, 8, and 24-hour off-site concentrations of sulfur, ammonia, and amine as well as prepared a traffic analysis.

Client: Jefferson PRP Group (Los Angeles, California)
Evaluated exposure pathways for chlorinated solvents and hexavalent chromium for human health risk assessment of Los Angeles Academy (formerly Jefferson New Middle School) operated by Los Angeles Unified School District.

Client: Covanta (Susanville California)
Prepared human health risk assessment for Covanta Energy focusing on agricultural worker exposure to caustic fertilizer.

Client: CIWMB (Sacramento California)
Used dispersion models to estimate traveling distance and VOC concentrations downwind from a composting facility for the California Integrated Waste Management Board.

Client: Carboquimeca (Bogotá, Columbia)
Evaluated exposure pathways for human health risk assessment for a confidential client focusing on significant concentrations of arsenic and chlorinated solvents contaminating groundwater used for drinking water.

Client: Navy Base Realignment and Closure Team (Treasure Island, California)
Used Johnson-Ettinger model to estimate indoor air PCB concentrations and compared estimated values with empirical data collected in homes. Negotiated action levels with DTSC.

Client: San Diego State University (San Diego California)
Measured CO_2 flux from soils amended with different quantities of biosolids compost at Camp Pendleton to determine CO_2 credit values for coastal sage under fertilized and non-fertilized conditions.

Client: Navy Base Realignment and Closure Team (MCAS Tustin, California)
Evaluated cumulative risk of a multiple pathway scenario with a child resident and a construction worker's exposure to air and soil via particulate and vapor inhalation, incidental soil ingestion, and dermal contact with soil.

Client: MCAS Miramar (San Diego, California)
Evaluated exposure pathways of metals in soil, comparing site data to background data. Risk assessment incorporated multiple pathway scenarios assuming child resident and construction worker exposure to particulate and vapor inhalation, soil ingestion, and dermal soil contact.

Client: Naval Weapons Station (Seal Beach, California)
Used a multiple pathway model to generate dust emission factors from automobiles driving on dirt roads. Calculated bioaccumulation of metals, PCBs, dioxin congeners and pesticides to estimate human and ecological risk.

Client: King County, Douglas County (Washington State)
Measured PM_{10} and $PM_{2.5}$ emissions from windblown soil treated with biosolids and a polyacrylamide polymer in Douglas County Washington. Used Pilat Mark V impactor for measurement and compared data to EPA particulate regulations.

Client: King County, Seattle, Washington.
Conducted emission inventory for several compost and wastewater facilities comparing VOC, particulate, and fungi concentrations to NIOSH values estimating risk to workers and individuals at neighboring facilities.

Air Pollution Investigation and Remediation

Client: Republic Landfill (Santa Clarita, CA)
Managed a field investigation of odor around a landfill during 30+ events. Using hedonic tone, butanol scale, dilution-to-threshold values, and odor character to evaluate odor sources and character and intensity.

Client: California Biomass (Victorville, CA)
Managed a field investigation of odor around landfill during 9+ events. Using hedonic tone, butanol scale, dilution-to-threshold values, and odor character to evaluate odor sources, character and intensity.

Client: ABT-Haskell (Redlands, California)
Assisted in permitting a compost facility that will be completely enclosed with a complex scrubbing system using acid scrubbers, base scrubbers, biofilters, heat exchangers and chlorine to reduce VOC emissions by 99 percent.

Client: Synagro (Corona, California)
Designed and monitored 30-foot by 20-foot by 6-foot biofilter for VOC control from an industrial composting facility in Corona, California, reducing VOC emissions by 99 percent.

Client: Jeff Gage, (Tacoma, Washington)
Conducted emission inventory at industrial compost facility using GC/MS analyses for VOCs. Evaluated effectiveness of VOC and odor control systems and estimated human health risk.

Client: Daishowa America (Port Angeles Mill, Washington)

Analyzed industrial paper sludge and ash for VOCs, heavy metals and nutrients to develop a land application program. Metals were compared to federal guidelines to determine maximum allowable land application rates.

Client: Jeff Gage (Puyallup Washington)

Measured effectiveness of biofilters at composting facility and ran EPA dispersion models to estimate traveling distance of odor and human health risk from exposure to volatile organics.

Surface Water, Groundwater, and Wastewater Investigation/Remediation

Client: Confidential (Downey, California)

Managed groundwater investigation to determine horizontal extent of 1,000 foot TCE plume associated with a metal finishing shop.

Client: Confidential (West Hollywood, California)

Designed soil vapor extraction system that is currently being installed for confidential client. Managed groundwater investigation to determine horizontal extent of TCE plume associated with dry cleaning.

Client: Synagro Technologies (Sacramento, California)

Managed groundwater investigation to determine if biosolids application impacted salinity and nutrient concentrations in groundwater.

Client: Navy Base Realignment and Closure Team (Treasure Island, California)

Assisted in the design and remediation of PCB, chlorinated solvent, hydrocarbon and lead contaminated groundwater and soil on Treasure Island. Negotiated screening levels with DTSC and Water Board. Assisted in the preparation of FSP/QAPP, RI/FS, and RAP documents and assisted in CEQA document preparation.

Client: Navy Base Realignment and Closure Team (MCAS Tustin, California)

Assisted in the design of groundwater monitoring systems for chlorinated solvents at Tustin MCAS. Contributed to the preparation of FS for groundwater treatment.

Client: MCP (Walnut, California)

Conducted forensic surface water and sediment sampling. Designed and conducted bench scale laboratory experiments. Demonstrated that metal and organic contaminants in storm water and sediment from landfill flooded and chemically compromised a polyurethane track.

Client: Mission Cleaning Facility (Salinas California)

Prepared a RAP and cost estimate for using an oxygen releasing compound (ORC) and molasses to oxidize diesel fuel in soil and groundwater at Mission Cleaning in Salinas.

Client: King County, Washingon
Established and monitored experimental plots at a US EPA Superfund Site in wetland and upland mine tailings contaminated with zinc and lead in Smelterville, Idaho. Used organic matter and pH adjustment for wetland remediation and erosion control.

Client: City of Redmond (Richmond, Washington)
Collected storm water from compost-amended and fertilized turf to measure nutrients in urban runoff. Evaluated effectiveness of organic matter-lined detention ponds on reduction of peak flow during storm events. Drafted compost amended landscape installation guidelines to promote storm water detention and nutrient runoff reduction.

Client: City of Seattle (Seattle, Washington)
Measured VOC emissions from Renton wastewater treatment plant in Washington. Ran GC/MS, dispersion models, and sensory panels to characterize, quantify, control and estimate risk from VOCs.

Client: Plumas County (Quincy, California)
Installed wetland to treat contaminated water containing 1% copper in an EPA Superfund site. Revegetated 10 acres of acidic and metal laden sand dunes resulting from hydraulic mining. Installed and monitored piezometers in wetland estimating metal loading.

Client: Adams Egg Farm (St. Kitts, West Indies)
Designed, constructed, and maintained 3 anaerobic digesters at Springfield Egg Farm, St. Kitts. Digesters treated chicken excrement before effluent discharged into sea. Chicken waste was converted into methane cooking gas.

Client: BLM (Kremmling Colorado)
Collected water samples for monitoring program along upper stretch of the Colorado River. Rafted along river, protecting water quality by digging and repairing latrines.

Soil Science and Restoration Projects

Client: Kinder Morgan (San Diego County California)
Designed and monitored the restoration of a 110-acre project on Camp Pendleton along a 26-mile pipeline. Managed crew of 20, planting coastal sage, riparian, wetland, native grassland, and marsh ecosystems. Negotiated with the CDFW concerning species planting list and success standards.

Client: NAVY BRAC (Orote Landfill, Guam)
Designed and monitored pilot landfill cap mimicking limestone forest. Measured different species' root-penetration into landfill cap. Plants were used to evapotranspirate water, reducing water leaching through soil profile.

Client: LA Sanitation District Puente Hills Landfill (Whittier, California)
Monitored success of upland and wetland mitigation at Puente Hills Landfill operated by Sanitation Districts of Los Angeles. Negotiated with the Army Corps of Engineers and CDFG to obtain an early sign-off.

Client: City of Escondido (Escondido California)
Designed, managed, installed, and monitored a 20-acre coastal sage scrub restoration project at Kit Carson Park, Escondido, California.

Client: Home Depot (Encinitas, California)
Designed, managed, installed and monitored a 15-acre coastal sage scrub and wetland restoration project at Home Depot in Encinitas, California.

Client: Alvarado Water Filtration Plant (San Diego, California)
Planned, installed and monitored 2-acre riparian and coastal sage scrub mitigation in San Diego California.

Client: Monsanto and James River Corporation (Clatskanie Oregon)
Served as a soil scientist on a 50,000-acre hybrid poplar farm. Worked on genetically engineering study of Poplar trees to see if glyphosate resistant poplar clones were economically viable.

Client: World Wildlife Fund (St. Kitts, West Indies)
Managed 2-year biodiversity study, quantifying and qualifying the various flora and fauna in St. Kitts' expanding volcanic rainforest. Collaborated with skilled botanists, ornithologists and herpetologists.

Publications

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste*, Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2011). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences* 4(2011):113-125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.**, (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health* 73(6):34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries*, Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*, Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P**. (2009). 'Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States', in Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII:*

Proceedings of the Seventeenth International Conference on Modelling, Monitoring and Management of Air Pollution, Tallinn, Estonia. 20-22 July, 2009, Southampton, Boston. WIT Press.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. Organohalogen Compounds, Volume 70 (2008) page 002254.

Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. Organohalogen Compounds, Volume 70 (2008) page 000527.

Hensley, A.R. A. Scott, J. J. J. Clark, **P. E. Rosenfeld** (2007) "Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility" Environmental Research. 105, pp 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007) "The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities" –Water Science & Technology 55(5): 345-357.

Rosenfeld, P. E., M. Suffet. (2007) **"**The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment **"** Water Science & Technology 55(5): 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.,** (2007) "Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities," Elsevier Publishing, Boston Massachusetts.

Rosenfeld P.E., and Suffet, I.H. (Mel) (2007) "Anatomy Of An Odor Wheel" Water Science and Technology, In Press.

Rosenfeld, P.E., Clark, J.J.J., Hensley A.R., Suffet, I.H. (Mel) (2007) "The use of an odor wheel classification for evaluation of human health risk criteria for compost facilities." Water Science And Technology, In Press.

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (2006) "Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006, August 21 – 25, 2006. Radisson SAS Scandinavia Hotel in Oslo Norway.

Rosenfeld, P.E., and Suffet I.H. (2004) "Control of Compost Odor Using High Carbon Wood Ash", Water Science and Technology, Vol. 49, No. 9. pp. 171-178.

Rosenfeld, P.E., Clark J. J. and Suffet, I.H. (2004) "Value of and Urban Odor Wheel." (2004). WEFTEC 2004. New Orleans, October 2 - 6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004) "Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids" Water Science and Technology. Vol. 49, No. 9. pp 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004) "Control of Compost Odor Using High Carbon Wood Ash", Water Science and Technology, Vol. 49, No. 9. pp. 171-178.

Rosenfeld, P. E., Grey, M. A., Sellew, P. (2004) Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. Water Environment Research. 76 (4): 310-315 JUL-AUG 2004.

Rosenfeld, P. E., Grey, M., (2003) Two stage biofilter for biosolids composting odor control. Seventh International In Situ And On Site Bioremediation Symposium. Batelle Conference Orlando Florida. June 2 and June 6, 2003.

Rosenfeld, P.E., Grey, M and Suffet, M. 2002. "Controlling Odors Using High Carbon Wood Ash." Biocycle, March 2002, Page 42.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). "Compost Demonstration Project, Sacramento, California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility Integrated Waste Management Board Public Affairs Office, Publications Clearinghouse (MS–6), Sacramento, CA Publication #442-02-008. April 2002.

Rosenfeld, P.E., and C.L. Henry. 2001. Characterization of odor emissions from three different biosolids. Water Soil and Air pollution. Vol. 127 Nos. 1-4, pp. 173-191

Rosenfeld, P.E., and Henry C. L., 2000. Wood ash control of odor emissions from biosolids application. Journal of Environmental Quality. 29:1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. 2001. Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. Water Environment Research. 73: 363-367.

Rosenfeld, P.E., and C.L. Henry. 2001. Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants Water Environment Research, 73: 388-392.

Rosenfeld, P.E., and Henry C. L., 2001. High carbon wood ash effect on biosolids microbial activity and odor. Water Environment Research. Volume 131 No. 1-4, pp. 247-262

Rosenfeld, P.E, C.L. Henry, R. Harrison. 1998. Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Bellevue Washington.

Chollack, T. and **P. Rosenfeld.** 1998. Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

P. Rosenfeld. 1992. The Mount Liamuiga Crater Trail. Heritage Magazine of St. Kitts, Vol. 3 No. 2.

P. Rosenfeld. 1993. High School Biogas Project to Prevent Deforestation On St. Kitts. Biomass Users Network, Vol. 7, No. 1, 1993.

P. Rosenfeld. 1992. British West Indies, St. Kitts. Surf Report, April issue.

P. Rosenfeld. 1998. Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

P. Rosenfeld. 1994. Potential Utilization of Small Diameter Trees On Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

P. Rosenfeld. 1991. How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

England Environmental Agency, 2002. Landfill Gas Control Technologies. Publishing Organization Environment Agency, Rio House, Waterside Drive, Aztec West, Almondsbury BRISTOL, BS32 4UD

Presentations

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** "Atrazine: A Persistent Pesticide in Urban Drinking Water." Urban Environmental Pollution, Boston, MA, June 20-23, 2010.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** "Bringing Environmental Justice to East St. Louis, Illinois." Urban Environmental Pollution, Boston, MA, June 20-23, 2010.

Rosenfeld, P.E. (2009) "Perfluoroctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States" Presentation at the 2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting, April 19-23, 2009. Tuscon, AZ.

Rosenfeld, P.E. (2009) "Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States" Presentation at the 2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting, April 19-23, 2009. Tuscon, AZ.

Rosenfeld, P. E. (2007) "Moss Point Community Exposure To Contaminants From A Releasing Facility" Platform Presentation at the 23rd Annual International Conferences on Soils Sediment and Water, October 15-18, 2007. University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (2007) "The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant" Platform Presentation at the 23rd Annual International Conferences on Soils Sediment and Water, October 15-18, 2007. University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (2007) "Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions" Poster Presentation at the 23rd Annual International Conferences on Soils Sediment and Water, October 15-18, 2007. University of Massachusetts, Amherst MA.

Rosenfeld P. E. "Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP)" – Platform Presentation at the Association for Environmental Health and Sciences (AEHS) Annual Meeting, San Diego, CA, 3/2007

Rosenfeld P. E. "Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama" – Platform Presentation at the AEHS Annual Meeting, San Diego, CA, 3/2007

Hensley A.R., Scott, A., **Rosenfeld P.E.,** Clark, J.J.J. (2006) "Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." APHA 134 Annual Meeting & Exposition, Boston Massachusetts. November 4 to 8th, 2006.

Paul Rosenfeld Ph.D. "Fate, Transport and Persistence of PFOA and Related Chemicals." Mealey's C8/PFOA Science, Risk & Litigation Conference" October 24, 25. The Rittenhouse Hotel, Philadelphia.

Paul Rosenfeld Ph.D. "Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation PEMA Emerging Contaminant Conference. September 19. Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. "Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP." PEMA Emerging Contaminant Conference. September 19. Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. "Fate, Transport and Persistence of PDBEs." Mealey's Groundwater Conference. September 26, 27. Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. "Fate, Transport and Persistence of PFOA and Related Chemicals." International Society of Environmental Forensics: Focus On Emerging Contaminants. June 7,8. Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. "Rate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals". 2005 National Groundwater Association Ground Water And Environmental Law Conference. July 21-22, 2005. Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. "Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation." 2005 National Groundwater Association Ground Water And Environmental Law Conference. July 21-22, 2005. Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. National Groundwater Association. Environmental Law Conference. May 5-6, 2004. Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D., 2004. Perchlorate Toxicology. Presentation to a meeting of the American Groundwater Trust. March 7th, 2004. Pheonix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse, 2004. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

Paul Rosenfeld, Ph.D. A National Damage Assessment Model For PCE and Dry Cleaners. Drycleaner Symposium. California Ground Water Association. Radison Hotel, Sacramento, California. April 7, 2004.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants. February 20-21, 2003. Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. Underground Storage Tank Litigation and Remediation. California CUPA Forum. Marriott Hotel. Anaheim California. February 6-7, 2003.

Paul Rosenfeld, Ph.D. Underground Storage Tank Litigation and Remediation. EPA Underground Storage Tank Roundtable. Sacramento California. October 23, 2002

Rosenfeld, P.E. and Suffet, M. 2002. Understanding Odor from Compost, Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association. Barcelona Spain. October 7- 10.

Rosenfeld, P.E. and Suffet, M. 2002. Using High Carbon Wood Ash to Control Compost Odor. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association. Barcelona Spain. October 7- 10.

Rosenfeld, P.E. and Grey, M. A. 2002. Biocycle Composting For Coastal Sage Restoration. Northwest Biosolids Management Association. Vancouver Washington. September 22-24.

Rosenfeld, P.E. and Grey, M. A. 2002. Soil Science Society Annual Conference. Indianapolis, Maryland. November 11-14.

Rosenfeld. P.E. 2000. Two stage biofilter for biosolids composting odor control. Water Environment Federation. Anaheim California. September 16, 2000.

Rosenfeld. P. E. 2000. Wood ash and biofilter control of compost odor. Biofest. October 16, 2000.Ocean Shores, California

Rosenfeld, P. E. 2000. Bioremediation Using Organic Soil Amendments. California Resource Recovery Association. Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. 1998. Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. 1999. An evaluation of ash incorporation with biosolids for odor reduction. Soil Science Society of America. Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. 1998. Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. Brown and Caldwell, Seattle Washington.

Rosenfeld, P.E., C.L. Henry. 1998. Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. Biofest Lake Chelan, Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. 1997. Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. Soil Science Society of America, Anaheim California.

Professional History

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Founding And Managing Partner
UCLA School of Public Health; 2007 to present; Lecturer (Asst Res)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H_2O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist
Bureau of Land Management, Kremmling Colorado 1990; Scientist

Teaching Experience

UCLA Department of Environmental Health (Summer 2003 through 2010) Teach Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focuses on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course In Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5 2002 Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded

California Integrated Waste Management Board. $41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: $10,000 grant awarded to San Diego State University. Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. $100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. $20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: $10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: $15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. $500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993.

Cases that Dr. Rosenfeld Provided Deposition or Trial Testimony

In the Court of Common Pleas for the Second Judicial Circuit, State of South Carolina, County of Aiken
David Anderson, et al., *Plaintiffs*, vs. Norfolk Southern Corporation, et al., *Defendants*.
Case Number: 2007-CP-02-1584

In the Circuit Court of Jefferson County Alabama
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil action No. CV 2008-2076

In the Ninth Judicial District Court, Parish of Rapides, State of Louisiana
Roger Price, et al., *Plaintiffs*, vs. Roy O. Martin, L.P., et al., *Defendants*.
Civil Suit Number 224,041 Division G

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052

In the United States District Court for the Southern District of Ohio
Carolyn Baker, et al., *Plaintiffs*, vs. Chevron Oil Company, et al., *Defendants*.
Case Number 1:05 CV 227

In the Fourth Judicial District Court, Parish of Calcasieu, State of Louisiana
Craig Steven Arabie, et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 07-2738 G

In the Fourteenth Judicial District Court, Parish of Calcasieu, State of Louisiana
Leon B. Brydels, *Plaintiffs*, vs. Conoco, Inc., et al*., Defendants*.
Case Number 2004-6941 Division A

In the District Court of Tarrant County, Texas, 153rd Judicial District
Linda Faust, *Plaintiff*, vs. Burlington Northern Santa Fe Rail Way Company, Witco Chemical Corporation A/K/A Witco Corporation, Solvents and Chemicals, Inc. and Koppers Industries, Inc., *Defendants*.
Case Number 153-212928-05

In the Superior Court of the State of California in and for the County of San Bernardino
Leroy Allen, et al., *Plaintiffs*, vs. Nutro Products, Inc., a California Corporation and DOES 1 to 100, inclusive, *Defendants*.
John Loney, Plaintiff, vs. James H. Didion, Sr.; Nutro Products, Inc.; DOES 1 through 20, inclusive, *Defendants*.
Case Number VCVVS044671

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM

In the Superior Court of the State of California in and for the County of Los Angeles
Leslie Hensley and Rick Hensley, *Plaintiffs*, vs. Peter T. Hoss, as trustee on behalf of the Cone Fee Trust; Plains Exploration & Production Company, a Delaware corporation; Rayne Water Conditioning, Inc., a

California corporation; and DOES 1 through 100, *Defendants.*
Case Number SC094173

In the Superior Court of the State of California in and for the County of Santa Barbara, Santa Maria Branch
Clifford and Shirley Adelhelm, et al., all individually, *Plaintiffs*, vs. Unocal Corporation, a Delaware Corporation; Union Oil Company of California, a California corporation; Chevron Corporation, a California corporation; ConocoPhillips, a Texas corporation; Kerr-McGee Corporation, an Oklahoma corporation; and DOES 1 though 100, *Defendants.*
Case Number 1229251 (Consolidated with case number 1231299)

In the United States District Court for Eastern District of Arkansas, Eastern District of Arkansas
Harry Stephens Farms, Inc, and Harry Stephens, individual and as managing partner of Stephens Partnership, *Plaintiffs*, vs. Helena Chemical Company, and Exxon Mobil Corp., successor to Mobil Chemical Co., *Defendants.*
Case Number 2:06-CV-00166 JMM (Consolidated with case number 4:07CV00278 JMM)

In the United States District Court for the Western District of Arkansas, Texarkana Division
Rhonda Brasel, et al., *Plaintiffs*, vs. Weyerhaeuser Company and DOES 1 through 100, *Defendants.*
Civil Action Number 07-4037

In The Superior Court of the State of California County of Santa Cruz
Constance Acevedo, et al. *Plaintiffs* Vs. California Spray Company, et al. *Defendants*
Case No CV 146344

In the District Court of Texas 21st Judicial District of Burleson County
Dennis Davis, *Plaintiff*, vs. Burlington Northern Santa Fe Rail Way Company, *Defendant.*
Case Number 25,151

July 22, 2021

City of Riverside
Planning Department
3900 Main Street
Riverside, CA 92522

Attention: Veronica Hernandez

Re: Sycamore Hills Distribution Center Project
APN 263-060-002, 263-060-024,
263-060-026, NOA of a DEIR

The Riverside County Flood Control and Water Conservation District (District) does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check City land use cases or provide State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided.

The District's review is based on the above-referenced project transmittal, received June 7, 2021. The District **has not** reviewed the proposed project in detail, and the following comments do not in any way constitute or imply District approval or endorsement of the proposed project with respect to flood hazard, public health and safety, or any other such issue:

☒ This project would not be impacted by District Master Drainage Plan facilities, nor are other facilities of regional interest proposed.

☐ This project involves District proposed Master Drainage Plan facilities, namely ________, _________________. The District will accept ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection, and administrative fees will be required.

☐ This project proposes channels, storm drains 36 inches or larger in diameter, or other facilities that could be considered regional in nature and/or a logical extension of the adopted ____ Master Drainage Plan. The District would consider accepting ownership of such facilities on written request of the City. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection, and administrative fees will be required.

☐ This project is located within the limits of the District's _______ Area Drainage Plan for which drainage fees have been adopted. If the project is proposing to create additional impervious surface area, applicable fees should be paid by cashier's check or money order only to the Flood Control District or City prior to issuance of grading or building permits. Fees to be paid should be at the rate in effect at the time of issuance of the actual permit.

☐ An encroachment permit shall be obtained for any construction related activities occurring within District right of way or facilities, namely, ____________________. For further information, contact the District's Encroachment Permit Section at 951.955.1266.

☒ The District's previous comments are still valid (see attached letter dated August 20, 2020).

GENERAL INFORMATION

This project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board. Clearance for grading, recordation, or other final approval should not be given until the City has determined that the project has been granted a permit or is shown to be exempt.

If this project involves a Federal Emergency Management Agency (FEMA) mapped floodplain, then the City should require the applicant to provide all studies, calculations, plans, and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) prior to grading, recordation, or other final approval of the project and a Letter of Map Revision (LOMR) prior to occupancy.

If a natural watercourse or mapped floodplain is impacted by this project, the City should require the applicant to obtain a Section 1602 Agreement from the California Department of Fish and Wildlife and a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers, or written correspondence from these agencies indicating the project is exempt from these requirements. A Clean Water Act Section 401 Water Quality Certification may be required from the local California Regional Water Quality Control Board prior to issuance of the Corps 404 permit.

Very truly yours,

Deborah de Chambeau

DEBORAH DE CHAMBEAU
Engineering Project Manager

Attachment

ec: Riverside County Planning Department
Attn: Phayvanh Nanthavongdouangsy

SLJ:blm

July 22nd, 2021

To: Veronica Hernandez, Senior Planner, City of Riverside

From: Leonard Nunney for Friends of Riverside's Hills (FRH)

Re: Response to Sycamore Hills Distribution Center Draft EIR, State Clearinghouse No. 2020079023.

The proposed project site is in a very environmentally sensitive area at the southern edge of Sycamore Canyon Wilderness Park (SCWP), a park of approximately 1500 acres. This natural open space area is a critical component in the conservation of biodiversity in Western Riverside County and, as such is a core area within the Western Riverside County Multiple Species Habitat Conservation Plan (the MSHCP). Being within the City of Riverside, it is also important to the enjoyment of natural open space by residents of the area and visitors. The concerns documented in this letter focus on these two issues; the sensitivity of the area requires very carefully constructed mitigation measures.

Friends of Riverside's Hills (FRH) is a 501(c)(3) non-profit group dedicated to the preservation and enhancement of the quality of life of the residents of Riverside by maintaining the natural beauty of the City, and by promoting the establishment of a network of linked natural open space areas in the City of Riverside and in the surrounding area.

In presenting the concerns of FRH, I need to point out that I am a professor at the University of California Riverside and one aspect of my research concerns the ability of small populations to avoid extinction. For example, two of my early (1990s) peer-reviewed scientific papers (Assessing minimum viable population size: demography meets population genetics, and Estimating the effective population size of conserved populations) have been cited 403 and 388 times, respectively, according to Google Scholar (as of today). As a result of my expertise, I became a member of the Scientific Advisory Panel that was involved in the establishment of the MSHCP.

Aesthetics

Threshold A: Would the Project have a substantial adverse effect on a scenic vista?

The DEIR states there would be a less than significant impact without mitigation. However, the DEIR failed to consider the significant impact on the many individuals using the adjoining natural space wilderness area, SCWP. The project does incorporate a feature to mitigate this effect: a 42" cable fence with an inner fire-resistant boundary of locally native trees (Figure 3.0-12A). Because this mitigation is required in perpetuity it is important that a mitigation measure be added that requires the cable fencing and vegetation be maintained into the future. In particular, it needs to be required that any trees or plants that die must be replaced with a similar locally native trees or plants.

Air Quality.

Threshold A: Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Threshold B: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Both are considered in the DEIR as Significant without Mitigation. However, the mitigation condition MM AIR-1 (prohibit manufacturing use) does not address the primary source of air pollution resulting from the project, which is the diesel particulate pollution from trucks arriving at, idling, and leaving from the warehouse facility, or from the motorized equipment involved in such activities as loading the trucks. It is stated that idling will be limited to 5 minutes (DEIR sec. 3.2.4); however, unless this is a mitigation measure it is not enforceable and can be ignored in the future. Such a mitigation measure needs to be added, since without it there may be a significant impact on air quality.

Biological Resources.

Threshold A: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Wildlife Service?

Significant without mitigation; however, the mitigation is inadequate to achieve the stated goal of less than significant.

MM BIO-1 concerns the paniculate tarplant and Robinson's pepper-grass, and relies on restoration based on on-site seed collection or the retention of topsoil. We hope that seed collection has already occurred in a good rainfall year. It is unlikely that many plants would have grown or set viable seed in this current severe drought. If seeds have not yet been collected, they would need to be collected during the appropriate seeding season for these plants in the next, reasonably good rainfall year. That would be in the spring for the pepper-grass and mid-summer to fall for the tarplant. Unfortunately, the mitigation measure, by allowing the option of only using stored topsoil provides no guarantee of success, and the seed collection, by failing to specify the number of parent plants contributing to the seed collection also fails to provide much guarantee of success. Thus, MM BIO-1does not provide adequate mitigation as defined. At a minimum if should require on-site seed collection (or, if necessary, from nearby locations as defined below) and the use of stored onsite topsoil, with some quantified minima placed on these two components.

MM NOI-1 concerns least Bell's vireo within 300ft (in SCWP) or within 100ft (inside the project boundaries) of project development. The primary mitigation strategy is a 12ft high noise-reducing fence. Unfortunately, this mitigation measure fails to require the identification of nesting activity, which should result in a cessation of activity within the stated boundaries until nesting is complete. In any event, the mitigation measure fails to mention a minimum distance considered too close for construction activity. For example, if a bird can be seen singing within 10ft of project activity, a sound wall will be totally ineffective at protecting that bird from noise. The appropriate mitigation strategy is to plan the construction outside of the time window of nesting activity (roughly mid-March to the end of August), but, at the very least, to require construction activity to occur during that period at least 300 ft away from the riparian areas. This recommendation links in with (and uses the same general principles as) the less restrictive MM BIO-9 that relates to all bird species.

See also concerns over noise mitigation listed below.

Threshold B: Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

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

Both significant without mitigation; however, all of the mitigation measures relate only to the construction phase of the project and not to the continuing potential impacts to the riparian habitat within and near to the project site.

Threshold F: Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There are some good and important mitigation measures required here, particularly those preventing any light intrusion into SCWP both during construction and beyond. However, again, most of the biological mitigation measures (MM BIO) address issues related to construction. MM BIO-11 is added here and continues this pattern of avoiding impacts that can occur after construction. It is noted that “Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.” It should be added that the material used in revegetation should be collected within SCWP or within the local ecoregion (e.g., within M262Bk Section: Southern California Mountains and Valleys, Subsection: Perris Valley and Hills, and M262Bj Section: Southern California Mountains and Valleys, Subsection: Fontana Plain and Calimesa Terraces) otherwise there us a danger of introducing maladapted genotypes that can negatively affect the local population.

The requirements of the MSHCP urban-wildlands interface require careful evaluation of the plant palette to be used. An appropriate palette was provided by Dr. Montalvo, an expert in restoration; however, we find that a number of inappropriate plants have been retained. These can result in a significant impact and should be removed.

Energy.

Threshold B: Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Threshold C: Would the Project achieve the goal of energy conservation by the following?
Decreasing overall per capita energy consumption;
Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
Increasing reliance on renewable energy sources.

These are listed as less than significant factors; however, while the project does go some way to achieve energy efficiency under California’s Green Building Code Title 24 standards, there is one area that needs to be mitigated to ensure progress towards California’s goal of achieving carbon neutrality by increasing reliance on renewable energy. It is stated that the buildings will "have "solar ready" roofs that will structurally accommodate later installation of rooftop solar panels, and that building operators providing rooftop solar panels will submit plans for solar panels prior to occupancy" (DEIR sec. 3.2.4). Unfortunately, nowhere is there an enforceable mitigation measure that ensures solar panels will ever be installed on any building. Even the quoted section does not state that operators will provide rooftop panels. As such there is a potentially significant impact that can easily be mitigated, but at present is not.

Noise.

Threshold A: Would the Project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Threshold B: Would the Project result in the generation of excessive groundborne vibration or groundborne noise levels?

A: Significant without mitigation; B: Not significant. However, MM NOI-1 only applies during construction. A long-term concern applies to nighttime noise and vibration levels around the western northern and north-eastern loading bays of Building A as large trucks come and go. The potential effect of vibration on animals living in burrows (such as Stephen's kangaroo rat) was not considered, but the vibration coming from large trucks will travel a significant distance.

Several mitigation measures are possible: one is to eliminate or significantly reduce the sound of backup warnings during nighttime hours. Another is to prohibit nighttime use during a few hours each night, so that there is a period of continuous quiet during each night when animals are undisturbed.

Thanks for your attention to these issues.

Regards,

Len Nunney, for Friends of Riverside's Hills.

Sycamore Hills Distribution Center- Comments on Proposed Landscaping and Revegetation Plan (2/4/2021 comments)

Native plants form the backbone of wild plant communities and wildlife habitat. In the wildland-urban interface, landscaping, restoration, and revegetation plans need to be reviewed to ensure they engage practices that protect the integrity of adjacent plant populations, the native vegetation communities, and the diversity of wildlife supported. This is especially important for development plans adjacent to reserves such as the Sycamore Canyon Wilderness Park and Reserve because the choice of plants for planting projects can have long-lasting effects on the reserve. In this period of rapid climate change, the ecological source of plant species, seeds, and other propagules can be especially critical to the establishment and long-term success of the plants used and their ability to reproduce over time. It is important to determine which plants are native to the target planting site and reserve (especially for restoration, water quality, and mitigation plantings) and which plants could potentially escape ornamental landscaping and become invasive within the reserve.

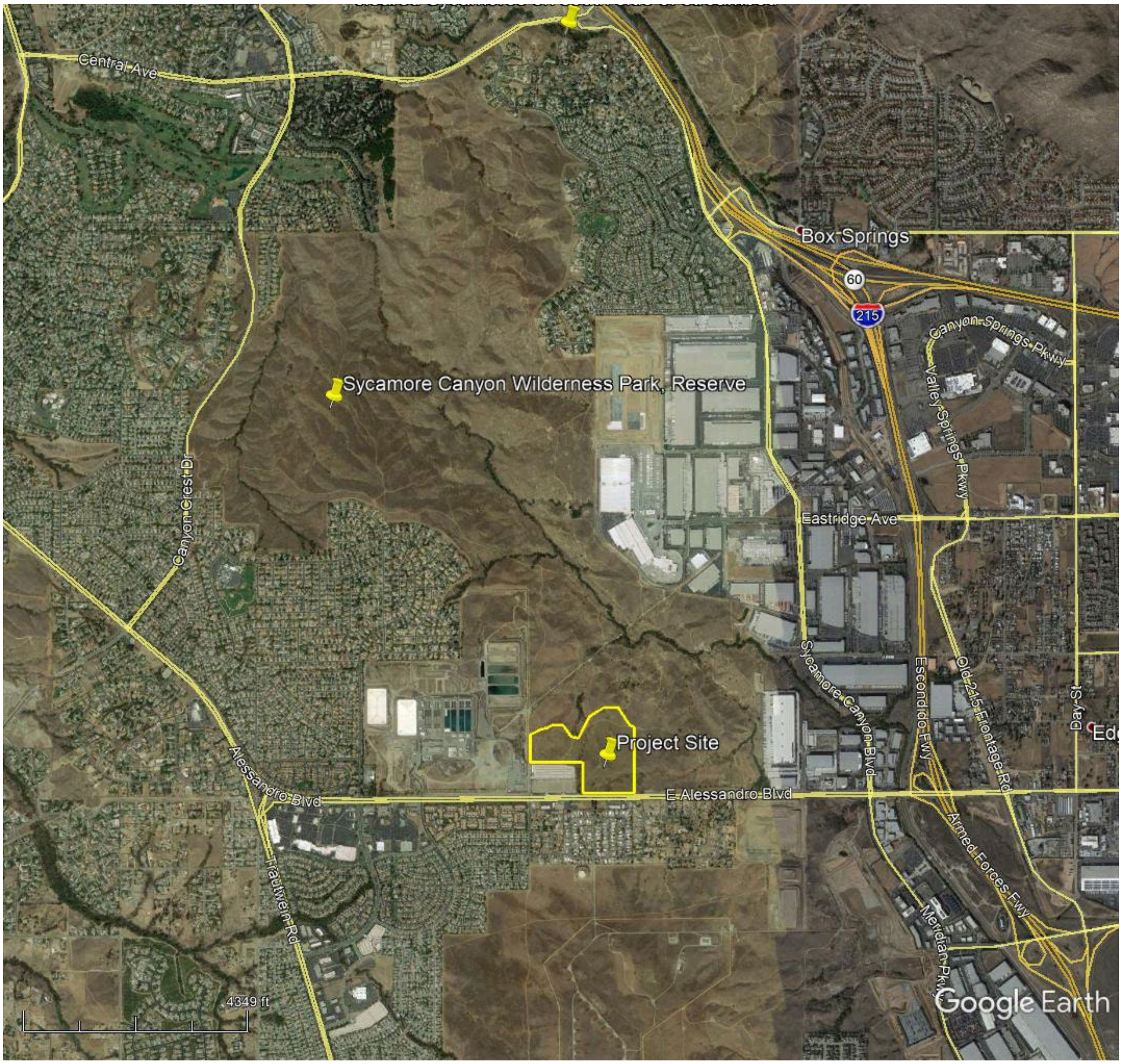
Steps can be taken to ensure that native plant materials for the project are appropriately adapted to the harsh inland environment. Seeds for seeding and container plant production should be obtained from wild populations of the local ecoregion or amplified from seeds sourced from within the interior valleys and foothills (below 2,500 ft. elevation) of Western Riverside County (within the Southern California Inland Mountains and Valleys ecological region). Sourcing of seeds and plant materials is best guided by experts with knowledge of the ecology, genetics, species distributions, and patterns of climate change over the landscape.

Here a few guidelines with regard to choices of plants for landscaping and mitigation areas:

- In mitigation areas, habitat plantings, and areas immediately adjacent to habitat, use native taxa that are actually local to this region of California, including varieties and subspecies.
- All plant materials used in landscaping adjacent to the Reserve, and which are not native to the local region, must be known to be non-invasive and unlikely to naturalize in the adjacent native habitat.
- Substitutions of California plant species, varieties or subspecies sourced from more coastal or higher rainfall regions should not occur.

Online tools are available to explore what plants are native and the potential of horticultural plants to invade wildlands. Local experts can also be consulted. It is no longer sufficient to exclude only the invasive plants noted in the Western Riverside County MSHCP[1]. Since the time that the MSHCP was signed, additional plants have been found to naturalize and become invasive in wildlands. One can easily consult the California Invasive Plant Council[2] website and search the Consortium of California Herbaria[3] (CCH) and CalFlora[4] databases to see if non-native plants from horticulture are being recorded as naturalized in local wildlands. The latter two databases can be used in concert with the Jepson e-flora[5] and plant profiles of important restoration plants[6] to determine what taxa are native to the area and appropriate to use.

For my review of the plant palettes for this project, I consulted the references noted above together with my personal experience. I have over 25 years of experiences in restoration practice and research involving southern California native plants and vegetation communities.



Location of project site relative to Sycamore Canyon Wilderness Park Reserve

Developments on the edge of habitat reserves have an opportunity and a special responsibility to use plant species in their landscaping and restoration plans that are compatible with the plants and wildlife of the adjacent reserve lands. This is especially true when there is sensitive habitat within the reserve. The current project overlaps and is adjacent to the Sycamore Canyon Wilderness Park and Reserve in Riverside, California (Reserve). There is sensitive riparian habitat (California State jurisdictional waters) and Steven's Kangaroo Rat Habitat adjacent to the project site. The project will also temporarily impact some habitat and there are plans to revegetate impacted areas. In addition to landscaping next to the Reserve, the plan includes revegetated slopes, water quality basins, and a parking area with native landscaping. The use of appropriate plant materials is feasible for this site and can be done by providing adequate notice to native plant and seed suppliers. The following review of the plant palettes is provided for the special case of development and planting in the vicinity of sensitive reserve lands.

I have attached an excel spreadsheet with 8 tabs containing notes about the plant palettes provided to me on the landscaping plans in July 2020. Tabs in the spreadsheet refer to the following information regarding the landscaping plan:

- Summary of plant palettes covered (general comments on each palette and general recommendations)
- Plants to remove from palettes (provides links to websites and evidence of invasiveness)
- Hydroseeding palette revisions (detailed comments; palette reworked using PLS pounds and alternative taxa)
- Bio-Retention container plants (detailed comments as to which plants to replace and suggested replacement plants)
- Park Landscape – in DG (comments on each plant taxon and potential replacements)
- Fuel Modification Area (suggest one taxon be replaced owing to flammability issue; provide list of slower to ignite natives good for this zone)
- Trees (comments on trees, which ones should be replaced, and suggested substitutions)
- Shrubs (list of shrubs to replace and replacement suggestions)

Please provide questions in writing. We can always schedule an online meeting to discuss options.

Arlee Montalvo, Ph.D.
Plant Restoration Ecologist
montalvo@ucr.edu

Summary of Plant Palette review. See individual tabs for details on each palette
See invasive plants tab for details.
Use of 5 gal. containers is not necessary for the shrubs and ground covers. Use 1 gal and save dollars.

Palette Name	comment summary
Accents	No invasiveness issues and no recommended changes. Not adjacent to reserve. Non-native palette with succulents and Lantana 'Gold Mound'
Trees	Remove invasive tree *Rhus lancea* . Recommendations for substitutions are provided.
Shrubs	Remove the Texas privet and *Baccharis pilularis* ' Centenial' which can invade reserve. Potential substitutions are provided.
Groundcover	No issues. OK as is.
Fuel Modification Area	*Artemisia californica* is quick to ignite and should be replace with a plant with slower ignition potential. Potential substitutions are provided.
Bio Retention Area	All species need to be native to this area because it drains into native areas and non-native plants are likely to disperse downstream. Some species are inappropriate for the site and can invade native streams. Substitutions are provided that make more sense for this hot summer, inland area.
Park Landscape- for DG	Try substituting *Eriogonum fasciculatum* var. *polifolium* for the dwarf coyote brush. The *Keckiella cordifolia* tends to occur in somewhat higher rainfall areas in our region and may not survive well at this hot, exposed location; two potential replacement plants include *Solanum xanti* and *Epilobium canum var. canum* .
Seed for hydroseeding	There are multiple problems with this seeding palette. It includes some inappropriate taxa for this site and it lacks a specification for Pure Live Seed (PLS). Recommended changes are provided including specification for PLS pounds that will probably save dollars.

Plants to Remove from Plant Palettes. Removal requested because they can be invasive int

Scientific name	Common Name	Problems
Ligustrum lucidum	Texas privet, tree privet	Plants produce copious berry-like fruits that are dispersed by birds and water. The plant can invade riparian areas.
Rhus lancea	African sumac	Use male trees or replace. Fruits from female trees are bird dispersed and plants can be invasive in landscaping and riparian areas and ephemeral drainages of the adjacent reserve and other landscaping. Pollen from
Baccharis pilularis 'Centenial'	Centenial coyote bush	Will likely invade reserve. This is a horticultural selection of Baccharis pilularis var. consanguinea. The species occurs naturally in more coastal and northern habitats. When planted in our area, it can invade riparian areas. *Baccharis pilularis* has often been misspecified for planting in our region.
Elaeagnus pungens	silverberry	Plant only away from reserve to prevent spread into reserve. The related *E. angustifolia* , Russion olive is invasive into seasonally moist places in California. *E. pungens* invades wildlands throughout the southeastern USA. DO NOT substitute with *E. angustifolia*

Cassia phyllodenia (=Senna artemisioides)	silverleaf cassia	Seeds itself readily into landscaped areas and potentially into adjacent natural areas were moisture exists. Plant away from reserve edges to insure it does not invade reserve.

o wildlands.

Links to sites that descrip invasiveness		Calflora Map-naturalized	Normal range of parent taxon (if California plant)
https://www.cal-ipc.org/plants/profile/ligustrum-lucidum-profile/	https://en.wikipedia.org/wiki/Privet_as_an_invasive_plant	https://www.calflora.org/cgi-bin/species_query.cgi?where-	
http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/searsialancea.html	https://www.fs.fed.us/r3/resources/health/invasives/shrubsTrees/africanSumac.shtml	https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=12012	
Personal observations in and near Riverside.			
			https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=11369
https://www.invasiveplantatlas.org/subject.html?sub=4526		https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=2897	

Personal observation and observations in CalFlora in wildlands.	https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=8576

Comments on hydroseeding mix for Park Landscape - planted in decomposed granite

The seed mix is being used adjacent to conservation areas or the wildland park reserve. As such, it should use plants that a
correct subspecies and varieties and all seed should come from the local ecoregion.

Seed should originate from inland southern California region (not coast or mountains)

The list A below should be replaced with List B which is appropriate for the location. List B provides taxa adapted to our ex
pounds so that in the total mix, between 25 and 50 live seeds would be deposited per square foot, depending on seeding r
seed lot data for the proportion that is live seeds and non-seed material. For example, if a bulk lb. of seed has a 80% germ
the example seed lot, a PLS pound weighs 2.5 pounds. This assures you are getting the recommended numbers of live see

A. Hydroseeding mix in plan document that needs to be revised:

ID	Botanical Name	Common Name	bulk Lbs/ Acre	PLS lb/ac		
	Aristica purpurea	purple three-awn	3			
	Artemisia california	California sage brush	4			
	Encelia farinosa	brittlebush, encensio	5			
	Eriogonum fasciculatum	California buckwheat	12			
	Mimulus aurantiacus	orange bush monkeyflow	2			
	Salvia apiana	white sage	2			
	Salvia mellifera	black sage	2			
	Acmispon glaber (Lotus scoparius)	deerweed	5			
	Eschscholzia californica	California poppy	3			
	Lupinus truncatus	collard annual lupine	3			
	Salvia columbariae	chia	1			
	Plantago erecta		4			
	Festuca microstachys (Vulpia microstachys)		3			
			46			

B. Recommended revised list:

				PLS lb/acre in mix	example % purity/ % germ	resulting bulk lb
shrubs/subshrubs		**common name**				
	Acmispon glaber var. *brevialatus*	inland deerweed		0.70	60/90	1.30
	Artemisia california	California sage brush		0.08	50/15	1.07
	Encelia farinosa	brittlebush		0.30	60/40	1.25
	Eriogonum fasciculatum var. *foliolosum*	California buckwheat		0.70	65/10	11.67
	Diplacus longiflorus	monkey flower		0.05	55/15	0.61
	Salvia apiana	white sage		0.70	50/70	2.00
	Salvia mellifera	black sage		0.60	50/70	1.71
				3.13		19.60
annuals, perennials, and grasses						
	Eriophyllum confertiflorum var. *confertiflorum*	golden yarrow		0.20	60/30	1.11
	Eschscholzia californica (inland form)	California poppy		0.10	75/98	0.14
	Lupinus truncatus	collard annual lupine		1.10	85/90	1.44
	Phacelia distans	common phacelia		0.30	90/70	0.48
	Phacelia minor	California bells		0.10	90/30	0.37
	Plantago erecta	dotseed plantain		1.20	90/80	1.67
	Salvia columbariae	chia		0.50	90/50	1.43
	Stipa pulchra (or *S. lepida*)	purple needle grass		1.00	70/60	2.38
	Vulpia microstachys (= Festuca microstachys)	small fescue		0.75	90/70	1.19
				5.25		10.20
	other possible substitutions/additions (early annuals):					
	Acmispon strigosus	strigose lotus				
	Phacelia ramosissima	branching phacelia				
	Lasthenia gracilis (might list as *L. californica)*	slender goldfields				
	Lupinus bicolor	miniature lupine				
	Poa secunda	Sandberb bluegrass				

re NATIVE to the area. There should be designation of			
treme, inland area. It also considers Pure Live Seed (PLS) nethod. A PLS pound is adjusted from bulk pounds by the ination but is only 50% pure, the PLS of the lot is 40%. For ds/sq foot applied to the location.			
Notes: A target purity and germination needs to be provided when you give bulk pounds. Use PLS pounds. See table below with revised mix.			
Not from this habitat. Replace with local perennial bunchgrass such as *Stipa pulchra, Melica imperfecta*			
taxon OK, but use PLS pounds			
taxon OK, but use PLS pounds			
use var. *foliolosum* or *var. polifolium (* not the coastal var. f*asciculatum)*			
Wrong species for here. Use *Diplacus longiflorus*			
OK			
OK			
use var. *brevialatus* (never the coastal var. *glaber*)			
OK- use native annual seeds, not domesticated seeds			
OK			
OK			
OK	use to balance seeds:		
OK	*43560 sq ft /acre		
	S&S guide	in mix target	
	seeds/ PLS lb	live seeds/ sq ft*	
	158,840	2.6	
	5,500,000	10.1	
	450,000	3.1	
	500,000	8.0	
	12,000,000	13.8	
	325,000	5.2	
	529,000	7.3	
	subtotal shrubs	50.1	
good perennial plant for early growth, suggest add	2,750,000	12.6	
Use local annual. There are a lot of seeds/lb.	1,000,000	2.3	
	40,000	1.0	
very common here- suggest adding	510,000	3.5	
very common here- suggest adding	1,453,600	3.3	
	250,000	6.9	
	550,000	6.3	
subbed for the Aristida	125,000	2.9	
	300,000	5.2	
	subtotal herbs/grasses	44.0	
	total seeds/sq ft	**94.1**	
	400,000		
perennial	550,000		
make sure if listed as L. californica, it comes from SoCal.	4,000,000		
	100,000		

Bio-Retention Area-			
This empties into Sycamore Canyon's streams so needs to use locally appropriate natives			
	Remove species in red and replace with those in blue or from the "other local species of moist		
initial plan- revise for Sycamore Canyon -- use plants that occur in western Riverside County, local eco			
	Scientific name	**common name**	**life form**
1	Rosa californica	California wild rose	shrub
2	Baccharis pilularis	coyote bush	shrub
3	Sambucus mexicana	Mexican elderberry	tall shrub
4	Mimulus cardinalis	scarlet monkeyflower	perennial herb
5	Aristida purpurea	purple three awn	bunch grass
6	Deschampsia caespitosa	tufted hairgrass	perennial grass
7	Distichlis spicata	salt grass	perennial grass
8	Juncus patens	California grey rush	perennial rush
9	Muhlenbergia rigens	deergrass	bunch grass
revised palette using plants actually native to Sycamore Canyon (use inland sources of plant materials			
	Scientific name	common name	
1	Rosa californica	California wild rose	shrub
2	Frankenia salina	alkali heath	perennial herb
3	Sambucus nigra ssp. caerulea	blue elderberry	tall shrub
4	Mimulus cardinalis (=Erythranthe c.)	scarlet monkeyflower	perennial herb
5	Sporobolus airoides	alkali sacaton	bunch grass
6	Anemopsis californica	yerba mansa	perennial herb
7	Distichlis spicata	salt grass	perennial grass
8	Juncus mexicanus/ or Juncus balticus	Mexican rush/ baltic rush	perennial rush
9	Muhlenbergia rigens	deergrass	bunch grass
other local species of moist sites (e.g., floodplains, ephemeral drainages) that could be substituted fo			
	Artemisia douglasiana	California mugwort	perennial herb
	Baccharis salicina (aka B. emoryi)	willow baccharis	shrub
	Isocoma menziesii var. vernonioides	Menzie's goldenbush	shrub
	Cyparus eragrostis	tall flatsedge	perennial herb
	Stachys ajugoides var. rigida	rigid hedge nettle	perennial herb
	Verbena lasiostachys var. scabrida	robust vervain	perennial herb
	Elymus triticoides	trailing wild rye	tall perennial grass
	Elymus condensatus	giant wild rye	tall perennial grass
	Urtica dioica ssp. holosericea	stinging nettle	tall perennial herb

sites" shown at bottom.		
region		
comments		
ok		
No. Not native here and too invasive. Replace with *Baccaris salicina* (aka. B. emoryi) and limit use. Better yet, use *Frankenia salina* .		
name changed (=S. caerulea ssp. nigra)		
ok- name changed to Erythranthe cardinalis		
No. Not here. Replace with Sporobolus airoides?		
No. Not native here, replace.		
ok		
no. Replace with J. mexicanus or J. balticus		
ok		
, NOT coastal)		
comments		
can use seeds		
can use seeds and/or containers		
use inland source, not coastal. Mycorrhizal.		
this is the one that grow in park, not J. patens		
from seeds or containers		
unavailable taxa or added as needed		
Plants srpead once established.		
can take over, use few plants.		
don't over use.		
Seeds in on its own. Can be overly competitive if added to seed palette.		
Establishes well from seed in first year.		
difficult to obtain seed from this region.		
difficult to obtain seed from this region.		
seeds		

Park Landscape-planted in decomposed granite.

	Scientific name	common name	life form	Riverside WULCOLS IV
1	Sphaeralcea ambigua	desert mallow	shrub	L
2	Baccharis pilularis 'Pigeon Point'	dwarf coyote bush	low shrub	L
3	Encelia farinosa	brittlebush	shrub	VL
4	Keckiella cordifolia	heart-leaved penstemon	shrub	L

See WULCOLS IV https://ucanr.edu/sites/WUCOLS/
Water Use Classification of Landscape Species has been updated.
WUCOLS IV provides evaluations of the irrigation water needs for over 3,500 taxa (taxonomic

comments

Not native here. OK on inside of walls but not directly by park.

Only plant males or it will spread into park.

Perhaps replace with Eriogonum fasciculatum var. polifolium. Also consider Epilobium canum var. canum.

ok

for Riverside, WULCOS says L, not VL. *K. antirrhinoides* is the species in the park. It survives our summers better, but becomes completely summer dormant and looks dead.

Perhaps replace with Solanum xanti.

plant groups) used in California landscapes.

Fuel Modification Area-

Replace species listed here			on plan	corrected RIVERSIDE
	Scientific name	**common name**	**WULCOLS**	**WULCOLS IV**
1	Artemisa california	California sagebrush (not mu	VL	VL
2	Cercocarpus betuloides	mountain mahogany	VL	VL
3	Heteromeles arbutifolia	toyon	VL	L
4	Rhamnus crocea	spiny redberry	VL	L

Substitutions: Use plants native to the reserve or shrubs that do not disperse seeds into the wildland an

1	Prunus ilicifolia ssp. ilicifolia	hollyleaf cherry		

other good plants for this plant palette:

Frangula californica (=Rhamnus californica)	coffee berry	L
Rhamnus ilicifolia	redberry	L
Rhus ovata	sugarbush	L

See WULCOLS IV https://ucanr.edu/sites/WUCOLS/
Water Use Classification of Landscape Species has been updated.
WUCOLS IV provides evaluations of the irrigation water needs for over 3,500 taxa (taxonomic plant

comments

Replace. Too quick to ignite for fuel modification area
ok
WULOLS input not correct for Riverside.
WULOLS input not correct for Riverside.

d become invasive.

evergreen plant, longer time to ignite for low fuel zone

evergreen plant, longer time to ignite for low fuel zone
evergreen plant, longer time to ignite for low fuel zone
evergreen plant, longer time to ignite for low fuel zone

t groups) used in California landscapes.

Trees-

Non-native trees that produce seeds that invade both landscaping and park must be replace

	Scientific name	common name	WULCOLS	Riverside WULCOLS IV
1	Chilopsis linearis	desert willow	L	L
2	Chitalpa tashkentensis	chitalpa	L	L
3	Cercis occidentalis	western redbud	M	L
4	Heteromeles arbutifolia	toyon	L	L
5	Platanus racemosa	California sycamore	M	Mod/Med
6	Quercus agrifolia	coast live oak	M	L
7	Rhus lancea (=Searsia lancea)	African sumac	L	L
8	Tristania conferta (=Lophostemon confertus)	Brisbane box	M	Mod/Med

Substitutions: Use native trees/ tall shrubs or trees that do not disperse seeds into the wi

Prunus ilicifolia ssp. ilicifolia	hollyleaf cherry	L
Rhus ovata	sugarbush	L
Ceanothus 'Ray Hartman'	Ray Hartman ceanothus	L
Quercus engelmannii	Engelmann oak, mesa oak	L

See WULCOLS IV https://ucanr.edu/sites/WUCOLS/

Water Use Classification of Landscape Species has been updated.

WUCOLS IV provides evaluations of the irrigation water needs for over 3,500 taxa (t ed

comments	
ok	
ok	
ok but sensitive to extreme heat	
ok	
ok-- NEVER replace with other sycamores	
ok	
DO NOT USE. This tree has naturalized and is invading natural habitats in southern California. For example, it has spread outward from landscaping around the museum at Lake Perris. More and more records are showing up in CalFlora. Birds and mamals disperse the seeds.	https://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum
USDA Plants database. Not listed as naturalized in Calif. Biogenic emissions may be high.	

ldland and become invasive.

These would be good replacements
These would be good replacements

updated and corrected for Riverside

axonomic plant groups) used in California landscapes.

SHRUBS-

Replace species listed here.

	Scientific name	common name	WULCOLS
1	Baccharis pilulars 'Centenial'	Coyote bush	L
2	Ligustrum lucidum (=L. j. Texanum)	Texas privet, tree privet	M
3	Elaeagnus pungens	silverberry	L
4			
5			
6			
7			
8			

Suggestions for substitutions

Substitutions: Use shrubs that are native or that do not disperse seeds into the wildland and beco

Ceanothus 'Ray Hartman'	Ray Hartment ceanothus
Rhus ovata	sugarbush
Prunus ilicifolia ssp. ilicifolia	hollyleaf cherry
Simmondsia chinensis	jojoba
Peritoma arborea	bladderpod

see WULCOLS IV search below for trees/shrubs with low water uses for Riverside
https://ucanr.edu/sites/WUCOLS/Plant_Search/?step=results&city_id=328&plant_name=&v

See WULCOLS IV https://ucanr.edu/sites/WUCOLS/
Water Use Classification of Landscape Species has been updated.
WUCOLS IV provides evaluations of the irrigation water needs for over 3,500 taxa (taxonomi

Riverside WULCOLS IV	comments
L	not native here and will invade wildland reserve
M	invasive into riparian areas of reserve
L	potentially invasive

me invasive.

L

L

L

VL

L

vater_use=VL&water_use=LO&water_use=M&plant_type=S&plant_type=T

c plant groups) used in California landscapes.

July 23, 2021

Veronica Hernandez
Senior Planner
City of Riverside
3900 Main Street, 3rd Floor
Riverside, California 92522
vhernandez@riversideca.gov

Dear Veronica Hernandez:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Sycamore Hills Distribution Center (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2020079023. The Project consists of the construction and operation of two transload short-term warehouse buildings totaling 603,100 square feet, primarily for the short-term storage and/or consolidation of manufactured goods prior to their distribution to retail locations or other warehouses. The Project is expected to generate approximately 847 daily vehicle trips, including 274 daily heavy-duty truck trips, along local roadways. The Project is proposed within the City of Riverside (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

CARB submitted a comment letter, which is attached to this letter, on the Notice of Preparation (NOP) for the DEIR released in July 2020. CARB's comments, dated August 27, 2020, highlighted the need for preparing a health risk assessment (HRA) for the Project and encouraged the City and applicant to implement all existing and emerging zero emission technologies to minimize exposure to diesel particulate matter (diesel PM) and nitrogen oxides (NOx) emissions for all neighboring communities, and to minimize the greenhouse gases that contribute to climate change. Due to the Project's proximity to residences already disproportionately burdened by multiple sources of pollution, CARB's comments expressed concerns with the potential cumulative health risks associated with the construction and operation of the Project.

The DEIR Did Not Model Mobile Air Pollutant Emissions Using CARB's 2021 Emission Factor Model (EMFAC2021)

The City and applicant modeled the Project's air pollutant emissions using mobile emission factors obtained from CARB's 2014 Emission Factors model (EMFAC2014). Since the public release of EMFAC2014 in May 2015, CARB has made many updates to the EMFAC model. These updates are reflected in EMFAC2017, released in May 2018, and EMFAC2021, released in January 2021. Some of the updates to the EMFAC model included updates to the heavy-duty truck activity and emission rates, and implementation of CARB's latest regulations.

EMFAC2014 underestimated diesel PM emission rates from diesel heavy-duty trucks due to limited in-use test data for engine model year 2010 and newer, thus the Project's mobile source diesel PM emissions are likely underestimated in the DEIR. CARB urges the City and applicant to model and report the Project's air pollution emissions from mobile sources using emission factors found in CARB's latest EMFAC2021. Mobile emission factors can be easily obtained by running the EMFAC2021 Web Database: *https://arb.ca.gov/emfac/emissions-inventory*.

The DEIR Did Not Account for Air Pollutant Emissions from Heavy Duty Trucks During On Site Grading

The DEIR did not account for mobile source air pollutant emissions from grading operations during the Project's construction phase. Based on CARB's review of the California Emissions Estimator Model (CalEEMod) outputs found in Appendix B (Air Quality Studies) of the DEIR, the City and applicant assumed that no heavy-duty truck trips would be required to import or export soil during the on-site grading. Furthermore, the DEIR does not explicitly state the quantity of soil needed to grade the Project site that would support this assumption. If the Project site cannot be graded using existing on-site soil, the soil will need to be imported into the Project site. If that is the case, a large number of heavy-duty truck trips may be required to transport soil.

CARB urges the City and applicant to remodel the Project's construction air pollutant emissions using accurate heavy duty truck trip estimates. Residences and other sensitive receptors (e.g., daycare facilities, senior care facilities, and schools) located near construction haul routes could be exposed to diesel exhaust emissions that were not evaluated in the DEIR. The DEIR should clearly state the total number of heavy-duty truck trips expected during Project construction so the public can fully understand the potential environmental effects of the Project on their communities.

The Final Environmental Impact Report Should Restrict the Operation of Transport Refrigeration Units within the Project Area

Chapter 3.2 (Project Characteristics) of the DEIR states that the proposed Project would not include the operation of on-site cold storage uses. Consequently, air pollutant emissions associated with cold storage operation were not included in the DEIR. Should the Project later include cold storage uses, residences near the Project-site could be exposed to significantly higher levels of toxic diesel PM and nitrogen oxides (NO_x), and greenhouse gases than trucks and trailers without TRUs. To ensure TRUs will not operate within the Project site without first quantifying and mitigating their potential impacts, CARB urges the City to include one of the following design measures in the Final Environmental Impact Report (FEIR):

- A Project design measure requiring contractual language in tenant lease agreements that prohibits tenants from operating TRUs within the Project-site; or
- A condition requiring a restrictive covenant over the parcel that prohibits the applicant's use of TRUs on the property, unless the applicant seeks and receives an amendment to its conditional use permit allowing such use.

If the City later chooses to allow TRUs to operate within the Project site, CARB urges the County to re-model the Project's air quality impact analysis and HRA to account for potential health risks. The updated air quality impact analysis and HRA should include the following air pollutant emission reduction measures:

- Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces to be equipped with electrical hookups for trucks with TRU or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the Project-site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration, and cryogenic transport refrigeration are encouraged and can also be included in lease agreements.[1]
- Include contractual language in tenant lease agreements that requires all TRUs entering the project site to be plug-in capable

The Final Environmental Impact Report Should Include More Mitigation Measures to Further Reduce the Project's Air Pollution Emissions

The DEIR concluded that the Project would not exceed the South Coast Air Quality Management District's significance thresholds and potential impacts are expected to be less than significant. Therefore, the Project has no mitigation measures specific to air quality except for Mitigation Measure MM AIR-1, which is required to ensure that the actual use of the site is consistent with the use described in the Project Description and analyzed in the project specific air quality analyses. However, the community near the Project site is already exposed to toxic diesel PM emissions from freight operations at existing industrial buildings and vehicular traffic on East Alessandro Boulevard and Interstate 215 (I-215). Due to the Project's proximity to residences and schools, CARB is concerned with the potential cumulative health impacts associated with the construction and operation of the Project. To further reduce the Project's air pollutant emissions, CARB urges the City and applicant to implement the emissions reduction measures listed in CARB's attached comment (Attachment A) on the NOP for the DEIR in the Final Environmental Impact Report.

1 CARB's Technology Assessment for Transport Refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at: *https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf*.

Conclusion

CARB is concerned about the potential public health impacts should the City approve the Project. To fully understand the Project's environmental impacts, the HRA should be revised in the FEIR using mobile and idling PM_{10} emission factors obtained from the latest version of EMFAC (i.e., EMFAC2021). If heavy-duty trucks are required to import or export soil from the site during Project construction, the Project's air quality analysis and HRA should be updated to reflect such activities. The FEIR should include a design measure restricting the operation of TRUs within the Project site. Should the City allow the proposed warehouse building to be used for cold storage, the City should update the Project's air quality analysis and HRA to account for the increase in air pollution and cancer risks resulting from trucks and trailers with TRUs visiting the Project site. Lastly, to reduce the Project's impact on public health, CARB encourages the City to implement the measures listed in Attachment A of this comment letter.

Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB appreciates the opportunity to comment on the DEIR for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. If you have questions, please contact Michaela Nucal, Air Pollution Specialist, via email at *michaela.nucal@arb.ca.gov*.

Sincerely,

Robert Krieger, Branch Chief, Risk Reduction Branch

Attachment

cc: See next page.

cc: State Clearinghouse
state.clearinghouse@opr.ca.gov

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Michaela Nucal, Air Pollution Specialist, Risk Reduction Branch

Attachment A

August 27, 2020

Veronica Hernandez
Senior Planner
City of Riverside
3900 Main Street, 3rd Floor
Riverside, California 92522
Submitted via email: vhernandez@riversideca.gov

Dear Veronica Hernandez:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Notice of Preparation (NOP) for the Sycamore Hills Distribution Center Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2020079023. The Project includes the development of two warehouse buildings totaling 603,100 square feet. The proposed warehouses will be used for short-term transloading operations, primarily for the short-term storage and/or consolidation of manufactured goods. The Project is located within the City of Riverside, California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

Freight facilities, such as warehouse and distribution facilities, can result in high daily volumes of heavy-duty diesel truck traffic and operation of on-site equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.[1] CARB has reviewed the NOP and is concerned about the air pollution and health risk impacts that would result should the City approve the Project.

I. The Project Would Increase Exposure to Air Pollution in Disadvantaged Communities

The Project, if approved, will expose nearby disadvantaged communities to elevated levels of air pollution. Residences are located approximately 350 feet south of the Project's southern boundary. In addition to residences, four schools (Taft Elementary School, John F. Kennedy Elementary School, Benjamin Franklin Elementary School, and Edgemont Elementary School) and a daycare center (Little Angels Daycare) are located within 2 miles of the Project. The community near the Project site is already exposed to toxic diesel particulate matter (diesel PM) emissions from freight operations

[1] With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail in the Scoping Plan issued in 2017, makes clear that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance.

at existing industrial buildings, and vehicular traffic on East Alessandro Boulevard and Interstate 215 (I-215). Due to the Project's proximity to residences, schools, and daycares already burdened by multiple sources of air pollution, CARB is concerned with the potential cumulative health impacts associated with the construction and operation of the Project.

The State of California has placed additional emphasis on protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017). AB 617 is a significant piece of air quality legislation that highlights the need for further emission reductions in communities with high exposure burdens, like those in which the Project is located. Diesel PM emissions generated during the construction and operation of the Project would negatively impact the community, which is already impacted by air pollution from existing industrial facilities and vehicular traffic on East Alessandro Boulevard and I-215.

II. The DEIR Should Quantify and Discuss the Potential Cancer Risks at Residential and Other Sensitive Receptors in the Vicinity of the Proposed Industrial Building

The Project, as proposed in the NOP, will not include refrigerated storage. The operation of cold storage warehouses would include trucks with transportation refrigeration units (TRU)[2] that emit significantly higher levels of toxic diesel PM emissions, oxides of nitrogen (NO_x), and greenhouse gases than trucks without TRUs. To ensure TRUs will not operate within the Project site, CARB urges the City to include one of the following design measures in a revised DEIR:

- A Project design measure requiring contractual language in tenant lease agreements that prohibits tenants from operating TRUs within the Project site; or

- A condition requiring a restrictive covenant over the parcel that prohibits the applicant's use of TRUs on the property, unless the applicant seeks and receives an amendment to its conditional use permit allowing such use.

If the City chooses to allow TRUs within the Project site, CARB urges the City to model air pollutant emissions from on-site TRUs, as well as prepare a health risk assessment (HRA) that shows the potential health risks. The DEIR should also include the air pollutant reduction measures listed in Attachment A.

In addition to the health risk associated with operations, construction health risks should be included in the air quality section of the DEIR and the Project's HRA. Construction of the Project would result in short-term diesel emissions from the use of both on-road and off-road diesel equipment. The Office of Environmental Health Hazard Assessment's

[2.] TRUs are refrigeration systems powered by diesel internal combustion engines that protect perishable goods during transport in an insulated truck and trailer vans, rail cars, and domestic shipping containers.

(OEHHA) guidance recommends assessing cancer risks for construction projects lasting longer than two months. Since construction would very likely occur over a period lasting longer than two months, the HRA prepared for the Project should include health risks for existing residences near the Project site during construction.

The HRA prepared in support of the Project should be based on the latest OEHHA guidance (2015 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments),[3] and the South Coast Air Quality Management District's (SCAQMD) CEQA Air Quality Handbook.[4] The HRA should evaluate and present the existing baseline (current conditions), future baseline (full build-out year, without the Project), and future year with the Project. The health risks modeled under both the existing and the future baselines should reflect all applicable federal, state, and local rules and regulations. By evaluating health risks using both baselines, the public and City planners will have a complete understanding of the potential health impacts that would result from the Project.

III. Conclusion

To reduce the exposure of toxic diesel PM emissions in disadvantaged communities already disproportionally impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel PM and NO_x emissions, as well as the greenhouse gases that contribute to climate change. CARB encourages the City and applicant to implement the measures listed in Attachment A of this comment letter to reduce the Project's construction and operational air pollution emissions.

Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

[3.] Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[4.] SCAQMD's 1993 Handbook can be found at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

CARB appreciates the opportunity to comment on the NOP for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your State Clearinghouse list of selected State agencies that will receive the DEIR as part of the comment period. If you have questions, please contact Michaela Nucal, Air Pollution Specialist, via email at michaela.nucal@arb.ca.gov.

Sincerely,

Richard Boyd

Richard Boyd, Chief
Risk Reduction Branch
Transportation and Toxics Division

Attachment

cc: See next page.

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ATTACHMENT A

Recommended Air Pollution Emission Reduction Measures for Warehouses and Distribution Centers

The California Air Resources Board (CARB) recommends developers and government planners use all existing and emerging zero to near-zero emission technologies during project construction and operation to minimize public exposure to air pollution. Below are some measures, currently recommended by CARB, specific to warehouse and distribution center projects. These recommendations are subject to change as new zero-emission technologies become available.

Recommended Construction Measures

1. Ensure the cleanest possible construction practices and equipment are used. This includes eliminating the idling of diesel-powered equipment and providing the necessary infrastructure (e.g., electrical hookups) to support zero and near-zero equipment and tools.

2. Implement, and plan accordingly for, the necessary infrastructure to support the zero and near-zero emission technology vehicles and equipment that will be operating on site. Necessary infrastructure may include the physical (e.g., needed footprint), energy, and fueling infrastructure for construction equipment, on-site vehicles and equipment, and medium-heavy and heavy-heavy duty trucks.

3. In construction contracts, include language that requires all off-road diesel-powered equipment used during construction to be equipped with Tier 4 or cleaner engines, except for specialized construction equipment in which Tier 4 engines are not available. In place of Tier 4 engines, off-road equipment can incorporate retrofits, such that, emission reductions achieved equal or exceed that of a Tier 4 engine.

4. In construction contracts, include language that requires all off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction be battery powered.

5. In construction contracts, include language that requires all heavy-duty trucks entering the construction site, during the grading and building construction phases be model year 2014 or later. All heavy-duty haul trucks should also meet CARB's lowest optional low-oxides of nitrogen (NO_x) standard starting in the year 2022.[1]

[1.] In 2013, CARB adopted optional low-NO_x emission standards for on-road heavy-duty engines. CARB encourages engine manufacturers to introduce new technologies to reduce NO_x emissions below the current mandatory on-road heavy-duty diesel engine emission standards for model year 2010 and later. CARB's optional low-NO_x emission standard is available at: https://www.arb.ca.gov/msprog/onroad/optionnox/optionnox.htm.

6. In construction contracts, include language that requires all construction equipment and fleets to be in compliance with all current air quality regulations. CARB is available to assist in implementing this recommendation.

Recommended Operation Measures

1. Include contractual language in tenant lease agreements that requires tenants to use the cleanest technologies available, and to provide the necessary infrastructure to support zero-emission vehicles and equipment that will be operating on site.

2. Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces be equipped with electrical hookups for trucks with transport refrigeration units (TRU) or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the project site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration, and cryogenic transport refrigeration are encouraged and can also be included in lease agreements.[2]

3. Include contractual language in tenant lease agreements that requires all TRUs entering the project site be plug-in capable.

4. Include contractual language in tenant lease agreements that requires future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans.

5. Include contractual language in tenant lease agreements requiring all TRUs, trucks, and cars entering the Project site be zero-emission.

6. Include contractual language in tenant lease agreements that requires all service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) used within the project site to be zero-emission. This equipment is widely available.

7. Include contractual language in tenant lease agreements that requires all heavy-duty trucks entering or on the project site to be model year 2014 or later, expedite a transition to zero-emission vehicles, and be fully zero-emission beginning in 2030.

[2.] CARB's Technology Assessment for Transport Refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at: https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf.

8. Include contractual language in tenant lease agreements that requires the tenant be in, and monitor compliance with, all current air quality regulations for on-road trucks including CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation,[3] Periodic Smoke Inspection Program (PSIP),[4] and the Statewide Truck and Bus Regulation.[5]

9. Include contractual language in tenant lease agreements restricting trucks and support equipment from idling longer than 5 minutes while on site.

10. Include contractual language in tenant lease agreements that limits on-site TRU diesel engine runtime to no longer than 15 minutes. If no cold storage operations are planned, include contractual language and permit conditions that prohibit cold storage operations unless a health risk assessment is conducted, and the health impacts fully mitigated.

11. Include rooftop solar panels for each proposed warehouse to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.

12. Including language in tenant lease agreements, requiring the installing of vegetative walls[6] or other effective barriers that separate loading docks and people living or working nearby.

[3.] In December 2008, CARB adopted a regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation is available at: https://www.arb.ca.gov/cc/hdghg/hdghg.htm.

[4.] The PSIP program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance. CARB's PSIP program is available at: https://www.arb.ca.gov/enf/hdvip/hdvip.htm.

[5.] The regulation requires that newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. CARB's Statewide Truck and Bus Regulation is available at: https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

[6.] Effectiveness of Sound Wall-Vegetation Combination Barriers as Near-Roadway Pollutant Mitigation Strategies (2017) is available at: https://ww2.arb.ca.gov/sites/default/files/classic//research/apr/past/13-306.pdf.

GREATER RIVERSIDE
CHAMBERS OF COMMERCE

The Chamber…building a stronger local economy

July 26, 2021

Chair Richard Kirby
Planning Commission
City of Riverside
3900 Main Street,
Riverside, CA 92501

Subject: Sycamore Hills Distribution Center Project - SUPPORT

Dear Chair Kirby and Members of the Planning Commission,

On behalf of the Greater Riverside Chambers of Commerce, representing over 1,200 local employers and 110,000 jobs in the Inland Southern California region, we respectfully SUPPORT KB Development's proposed development of the Sycamore Hills Distribution Center on East Alessandro Boulevard.

The Chamber's EastHills Business Council met with KB Development and voted in unanimous support of the project due to the investment and connectivity this development will bring to the EastHills area. The project will bring two 400,000 and 200,000 square foot centers to the currently vacant zoned commercial land. The buildings and landscaping will complement the surrounding area with natural aesthetics and colors.

In preservation of the surrounding trails and wild landscape, the development proposed to build out a parking lot adjacent to the Sycamore Canyon trails to allow residents to safely park without impeding on the land and to encourage healthy outdoor activities. The proposed project will also be built out 500 feet away from the conservation areas.

The Sycamore Hills Distribution Center will also bring needed jobs to the region. With the after-effects of COVID-19, the introduction of new employment opportunities in the area will boost the region towards economic growth and trajectory.

For these reasons, the Chamber requests your support of the proposed development of the Sycamore Hills Distribution Center on East Alessandro Boulevard.

Thank you for your consideration. Should you have any questions, please do not hesitate to contact me at 951-683-7100.

Respectfully,

Cindy Roth

Cindy Roth
President/CEO

CR/jd