Arroyo at Monrovia Station Specific Plan

Draft Environmental Impact Report

SCH No. 2019050016

Volume II

DEIR

.

Applicant:
MW Investment Group, LLC

Project Team:
MIG
Architects Orange
MJS Landscape Architecture
KHR Associates
Linscott Law Greenspan Engineers
Jacobsens Consulting

Contact:
MIG

September 2019

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APPENDIX A
NOTICE OF PREPARATION

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NOTICE OF PREPARATION

DATE:	May 22, 2019
TO:	Responsible Agencies, Trustee Agencies, and Other Interested Parties
LEAD AGENCY:	City of Monrovia Contact: Sheri Bermejo, Planning Division Manager Community Development Department 415 South Ivy Avenue Monrovia, CA 91016
SUBJECT:	Notice of Preparation[1] of a Draft Environmental Impact Report for the Arroyo at Monrovia Station Specific Plan

The City of Monrovia (City) will be the Lead Agency and will prepare a Draft Environmental Impact Report (DEIR) for implementation of a Specific Plan for the proposed project known as The Arroyo at Monrovia Station Specific Plan as described in the attached materials. We are interested in your agency's views as to the appropriate scope and content of the DEIR's environmental information pertaining to your agency's statutory responsibilities related to the environmental review. When submitting a response, please include the name of a contact person for your agency. For interested individuals, we would like to be informed of environmental topics of interest to you regarding the project.

The City has determined an EIR is required for the proposed Specific Plan, as such and as permitted by the California Environmental Quality Act Guidelines Section 15060(d) (Preliminary Review), the City will not prepare an Initial Study for the project.

The proposed project, its location, and its potential environmental effects are described within the attached document. The City welcomes public input during the Notice of Preparation (NOP) review period. Due to the time limits mandated by the CEQA Guidelines, your response must be sent ***no later than 30 days after your receipt of this notice***. If no response or request for additional time is received by the end of the review period, the City may presume that you have no response.

Please send your comments to:

Sheri Bermejo, Planning Division Manager
City of Monrovia
415 South Ivy Avenue, Monrovia CA 91016
sbermejo@ci.monrovia.ca.us

Reference: Title 14, California Code of Regulations, California Environmental Quality Act (CEQA) Guidelines, Sections 15082(a), 15103, and 15375

To allow for mailing, receipt, and 30-day review of this NOP, the comment period closes on **June 21, 2019**.

No scoping meeting is planned. Please contact the City directly for consultation.

Sheri Bermejo

Sheri Bermejo
Planning Division Manager
(626) 932-5565
sbermejo@ci.monrovia.ca.us

May 20, 2019

Date

Project Title: **The Arroyo at Monrovia Station Specific Plan**

Project Applicant: **Evergreen Investment Partners, LLC**

Project Location:

The City of Monrovia (City) is in the San Gabriel Valley region of Los Angeles County. The proposed Specific Plan comprises one city block and approximately 2.90 acres. The block is bounded by West Evergreen Avenue to the north, South Primrose Avenue to the east, South Magnolia Avenue to the west, and West Pomona Avenue to the south. The current land uses within the project site include light industrial, single family residential, and private surface parking. The site has a General Plan designation of Planned Development and is zoned Planned Development Area 12 (PD-12).

Figure 1 The project site is located in the City of Monrovia within one city block just south of the I-210 freeway and north of the Gold Line light rail station.

Project Description:

Evergreen Investment Partners, LLC proposes to implement The Arroyo at Monrovia Station Specific Plan. The Specific Plan would facilitate the construction of a mixed use structure to include a 302-unit, six-story apartment complex with 7,080 square feet of retail flex space associated with three live/work units; public space; and a seven-level (six-story) partially underground parking structure with 500 parking spaces, 452 of which are residential parking spaces (1.50 space/unit). The proposed flex space is planned as retail space but is proposed to be allowed to be re-purposed for eight (8) of the 302 units if leasing of the retail space does not occur. The three live/work units would also be part of the 302 total proposed units. A range of studios, and one-bedroom and two-bedroom apartments are proposed. Fifteen of the residential units would be dedicated as Very Low Income affordable units. As illustrated on Figure 2, other tenant amenities include a pool, a pet spa, bike "kitchen" (i.e., bicycle repair area), tenant lounge, centralized mail/package delivery room, and a golf simulation room. No offsite improvements to utilities are proposed under the Project, with the exception of sidewalk improvements around the perimeter of the development. Access to the parking structure would be from West Evergreen Avenue and West Pomona Avenue.

Retail/flex space, a leasing office, fitness amenities, and public plazas are proposed along the West Pomona Avenue frontage. A 5,410 square foot outdoor/rooftop deck is planned on top of the parking structure.

Required Approvals:

Implementation of The Arroyo at Monrovia Station Specific Plan will require the following discretionary approvals by the City of Monrovia:

- Certification of the Final Environmental Impact Report;
- Adoption of a Mitigation Monitoring and Reporting Program;
- Approval of a zoning text and map amendment to add "The Arroyo at Monrovia Station Specific Plan" to Section 17.04.035 of the Monrovia Municipal Code and amend the Zoning Map by changing the existing PD (Planned Development) zone to SP (Specific Plan).
- Adoption of The Arroyo at Monrovia Station Specific Plan;
- Approval of a Conditional Use Permit (CUP) for the construction of the mixed use apartment complex; and
- Approval of a Tentative Tract Map for consolidating twelve parcels into one parcel.

EIR Scope:

The City of Monrovia has determined that the proposed The Arroyo at Monrovia Station Specific Plan will require preparation of an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) statute and guidelines. The Arroyo at Monrovia Station Specific Plan will undergo a "project" level analysis.

The following environmental topics and their associated impact thresholds will be evaluated in the EIR

Aesthetics: The EIR will describe the aesthetic and urban design implications of the Specific Plan, including its visual relationships to the surrounding vicinity and the potential impacts of development (the proposed array of building masses, heights, view corridors etc.) on important surrounding vantage points.

Air Quality: The EIR will describe the potential short- and long-term impacts of development under the Specific Plan on local and regional air quality based on methodologies defined by the South Coast Air Quality Management District (SCAQMD). Due to the proximity to Interstate-210, a Health Risk Assessment (HRA) will be prepared in accordance with City of Monrovia policy.

Biological Resources: The EIR will evaluate potential impacts on biological resources resulting from implementation of the project. Mitigation measures will be defined as necessary to avoid or reduce the potential impacts.

Cultural and Historic Resources and Tribal Cultural Resources: The EIR will describe any potential impacts and mitigation needs associated with historic structures, archaeological resources, Tribal Cultural Resources, and paleontological resources.

Geology and Soils: The EIR will describe the potential geotechnical implications of implementation of the project.

Greenhouse Gas Emissions and Global Climate Change: The EIR will describe the potential impacts on local greenhouse gas emissions and global climate change, following the latest approach and methodologies recommended by State and regional agencies.

Hazards and Hazardous Materials: The EIR will describe the potential for hazardous material use or hazardous waste investigation and cleanup activities anticipated in the project area and will describe any associated potential impacts

and mitigation needs. Potential hazards and hazardous material impacts during construction of the project and mitigation needs will also be described.

Hydrology and Water Quality: The EIR will evaluate potential impacts on hydrology and water quality resulting from implementation of the project, including possible effects related to drainage and flooding.

Land Use and Planning: The EIR will describe the potential effects of implementation of the project on existing and planned land uses in the vicinity, including the relationship to other adopted regional and local plans.

Noise: The EIR will describe potential construction and long-term operation noise (traffic, mechanical systems etc.) impacts and related mitigation needs. Noise impacts associated with placement of new residences near the I-210 freeway and the METRO's Gold Line light rail will be evaluated as well.

Population and Housing: The EIR will describe the anticipated effects of development of the project on existing and projected population and housing characteristics. This information will be used to forecast public service and utility needs in the project area.

Public Services: The EIR will describe potential impacts on public services (police and fire protection parks and recreation, and schools) and any mitigation needs.

Transportation and Circulation: The EIR will describe the transportation and circulation implications of proposed buildout of the project, including its incremental contribution to daily and peak hour traffic on local and regional roadways. The evaluation will include roadway system impacts, transit implications, and effects on pedestrian and bicycle circulation. Proposed components to improve multimodal travel will also be described and evaluated.

Utilities and Service Systems: The EIR will describe potential impacts on local utility and service systems, including water supply, wastewater treatment, and solid waste disposal.

Agriculture, Forestry, and Minerals: The EIR will explain why these CEQA-defined environmental topics will not be adversely affected by implementation of the project.

The EIR will address the short- and long-term effects of the proposed project on the environment. Mitigation measures will be proposed for impacts that are determined to be significant, and a mitigation monitoring program will be developed as required by Section 15150 of the CEQA Guidelines. Finally, Pursuant to CEQA Guidelines Section 15126.6, the EIR will identify and compare a reasonable range of alternatives to the Project.

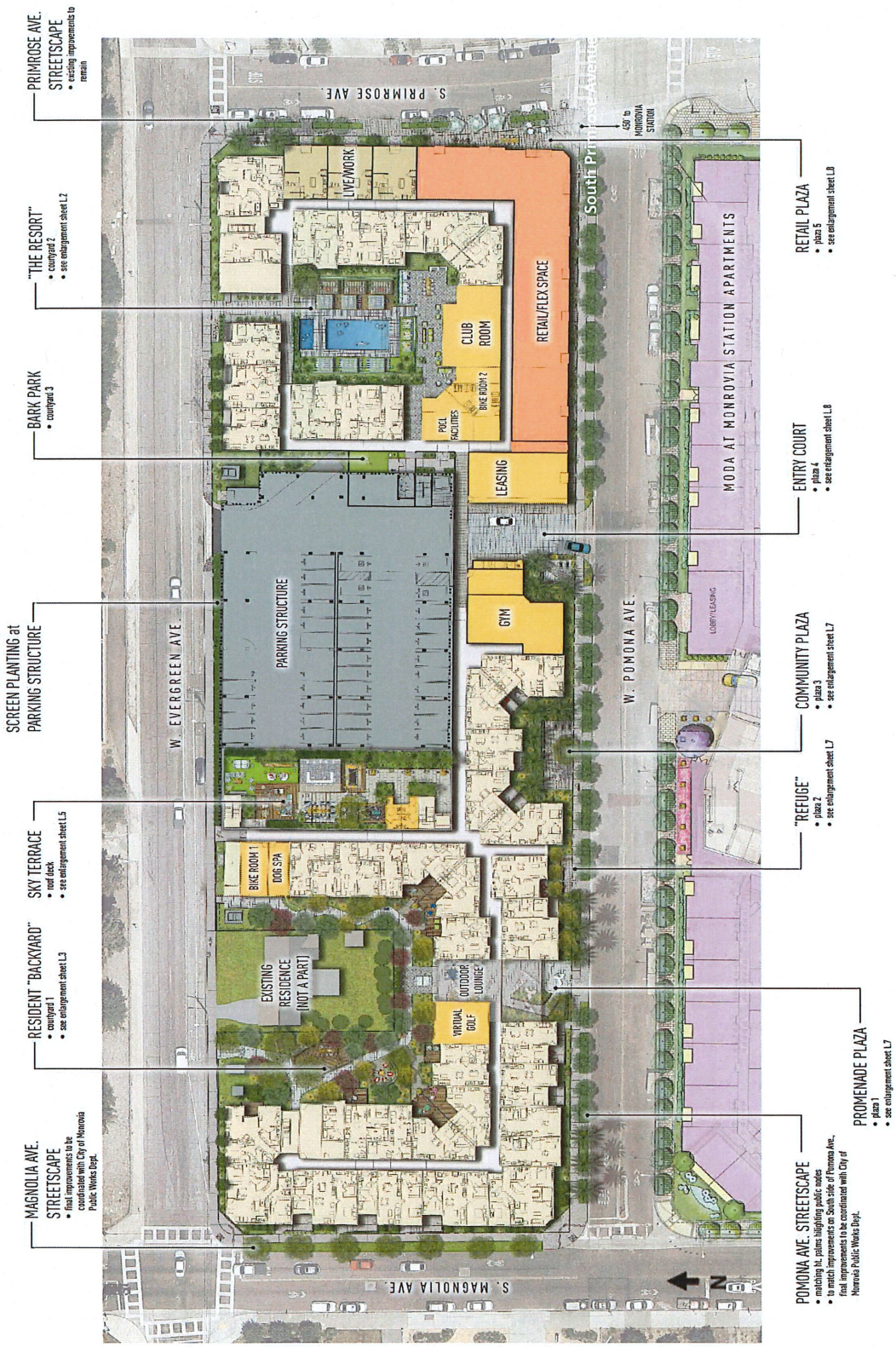

Figure 2. *The project site is located in the City of Monrovia within one city block just south of the I-210 freeway and north of the Gold Line light rail station.*

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: The Arroyo at Monrovia Station Specific Plan

Lead Agency: City of Monrovia | Contact Person: Sheri Bermejo

Mailing Address: 415 S. Ivy Avenue | Phone: (626) 932-5565

City: Monrovia | Zip: 91016-2888 | County: Los Angeles

Project Location: County: Los Angeles | City/Nearest Community: City of Monrovia

Cross Streets: West Evergreen/ South Primrose Avenues and West Pomona/Primrose Avenues | Zip Code: 91016

Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W | Total Acres: 2.9

Assessor's Parcel No.: Multiple | Section: ____ | Twp.: ____ | Range: ____ | Base: ____

Within 2 Miles: State Hwy #: Interstate 210 | Waterways: ____

Airports: ____ | Railways: L.A. Metro Gold Line | Schools: Santa Fe Middle School

Document Type:

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ ☐ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI

Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☒ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☒ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☒ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other: ____

Development Type:

☒ Residential: Units 302 Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☒ Commercial: Sq.ft. 7,080 Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☐ Other: ____

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☐ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☐ Flood Plain/Flooding ☐ Forest Land/Fire Hazard ☒ Geologic/Seismic ☐ Minerals ☐ Noise ☐ Population/Housing Balance ☒ Public Services/Facilities
☐ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☒ Sewer Capacity ☐ Soil Erosion/Compaction/Grading ☒ Solid Waste ☐ Toxic/Hazardous ☒ Traffic/Circulation
☐ Vegetation ☐ Water Quality ☐ Water Supply/Groundwater ☐ Wetland/Riparian ☐ Growth Inducement ☐ Land Use ☐ Cumulative Effects ☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Light industrial & single family residential. General Plan Designation: Planned Development Area

Project Description: *(please use a separate page if necessary)*

The Arroyo at Monrovia Station Specific Plan would facilitate the construction of a mixed use structure to include a 302-unit, six-story apartment complex with 7,080 square feet of retail flex space associated with three live/work units; 5,541 square feet of public space; and a seven-level (six-story) partially underground parking structure with 500 parking spaces. The retail flex space may be re-purposed for eight live/work units if retail does not occur. A range of studios, and one-bedroom and two-bedroom apartments are proposed. Fifteen of the residential units would be dedicated as Very Low Income affordable units.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

____	Air Resources Board	____	Office of Historic Preservation
____	Boating & Waterways, Department of	____	Office of Public School Construction
____	California Emergency Management Agency	____	Parks & Recreation, Department of
____	California Highway Patrol	____	Pesticide Regulation, Department of
X	Caltrans District # 7	X	Public Utilities Commission
____	Caltrans Division of Aeronautics	X	Regional WQCB # 4
____	Caltrans Planning	____	Resources Agency
____	Central Valley Flood Protection Board	____	Resources Recycling and Recovery, Department of
____	Coachella Valley Mtns. Conservancy	____	S.F. Bay Conservation & Development Comm.
____	Coastal Commission	____	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____	Colorado River Board	____	San Joaquin River Conservancy
____	Conservation, Department of	____	Santa Monica Mtns. Conservancy
____	Corrections, Department of	____	State Lands Commission
____	Delta Protection Commission	____	SWRCB: Clean Water Grants
____	Education, Department of	____	SWRCB: Water Quality
____	Energy Commission	____	SWRCB: Water Rights
X	Fish & Game Region # 5	____	Tahoe Regional Planning Agency
____	Food & Agriculture, Department of	____	Toxic Substances Control, Department of
____	Forestry and Fire Protection, Department of	____	Water Resources, Department of
____	General Services, Department of		
____	Health Services, Department of	____	Other:
____	Housing & Community Development	____	Other:
____	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date May 22, 2019 Ending Date June 21, 2019

Lead Agency (Complete if applicable):

Consulting Firm: MIG, Inc
Address: 537 S. Raymond Avenue
City/State/Zip: Pasadena CA 91105
Contact: Lisa Brownfield
Phone: (626)744-9872

Applicant: Evergreen Investment Partners, LLC
Address: 27702 Crown Valley Parkway, Suite 04-197
City/State/Zip: Ladera Ranch, CA 92694
Phone: (626) 710-6377

Signature of Lead Agency Representative: Sheri Bunnejo **Date:** May 20, 2019

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Notice of Preparation

To: State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044 (Address)

From: City of Monrovia
415 S. Ivy Avenue
Monrovia,CA 91016-2888 (Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

City of Monrovia will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Sheri Bermejo at the address shown above. We will need the name for a contact person in your agency.

Project Title: Alexan Specific Plan and General Plan/Zoning Code Amendments

Project Applicant, if any: Trammell Crow Residential

Date October 22, 2018

Signature Sheri Bermejo

Title Planning Division Manager

Telephone (626) 932-5539

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

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APPENDIX B
NOP DISTRIBUTION LIST AND SCOPING COMMENTS

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

Notice of Preparation

May 24, 2019

To: Reviewing Agencies

Re: The Arroyo at Monrovia Station Specific Plan
SCH# 2019050016

Attached for your review and comment is the Notice of Preparation (NOP) for the The Arroyo at Monrovia Station Specific Plan draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Sheri Bermejo
Monrovia, City of
415 S. Ivy Avenue
Monrovia, CA 91016-2888

with a copy to the State Clearinghouse in the Office of Planning and Research at state.clearinghouse@opr.ca.gov . Please refer to the SCH number noted above in all correspondence concerning this project on our website: https://ceqanet.opr.ca.gov/2019050016/2 .

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

cc: Lead Agency

Print Form

Appendix C

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SCH # 2019050016

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Lead Agency: City of Monrovia
Contact Person: Sheri Bermejo
Mailing Address: 415 S. Ivy Avenue
Phone: (626) 932-5565
City: Monrovia Zip: 91016-2888 County: Los Angeles

Project Location: County: Los Angeles City/Nearest Community: City of Monrovia
Cross Streets: West Evergreen/ South Primrose Avenues and West Pomona/Primrose Avenues Zip Code: 91016
Longitude/Latitude (degrees, minutes and seconds): ___° ___′ ___″ N / ___° ___′ ___″ W Total Acres: 2.9
Assessor's Parcel No.: Multiple Section: ___ Twp.: ___ Range: ___ Base: ___
Within 2 Miles: State Hwy #: Interstate 210 Waterways:
Airports: Railways: L.A. Metro Gold Line Schools: Santa Fe Middle School

Document Type:

CEQA: ☒ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement/Subsequent EIR
☐ Neg Dec (Prior SCH No.) ___
☐ Mit Neg Dec Other: ___

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI Other: ☐ Joint Document ☐ Final Document ☐ Other: ___

Governor's Office of Planning & Research
MAY 24 2019
STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☒ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☒ Site Plan ☒ Land Division (Subdivision, etc.) ☐ Other: ___

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☒ Residential: Units 302 Acres ___
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☒ Commercial: Sq.ft. 7,080 Acres ___ Employees ___
☐ Industrial: Sq.ft. ___ Acres ___ Employees ___
☐ Educational: ___
☐ Recreational: ___
☐ Water Facilities: Type ___ MGD ___

☐ Transportation: Type ___
☐ Mining: Mineral ___
☐ Power: Type ___ MW ___
☐ Waste Treatment: Type ___ MGD ___
☐ Hazardous Waste: Type ___
☐ Other: ___

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☐ Recreation/Parks ☐ Vegetation
☒ Agricultural Land ☐ Flood Plain/Flooding ☐ Schools/Universities ☐ Water Quality
☒ Air Quality ☐ Forest Land/Fire Hazard ☐ Septic Systems ☐ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☐ Wetland/Riparian
☒ Biological Resources ☐ Minerals ☐ Soil Erosion/Compaction/Grading ☐ Growth Inducement
☐ Coastal Zone ☐ Noise ☒ Solid Waste ☐ Land Use
☐ Drainage/Absorption ☐ Population/Housing Balance ☐ Toxic/Hazardous ☐ Cumulative Effects
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other: ___

Present Land Use/Zoning/General Plan Designation:

Light industrial & single family residential. General Plan Designation: Planned Development Area

Project Description: *(please use a separate page if necessary)*

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If you have already sent your document to the agency please denote that with an "S".

____	Air Resources Board	____	Office of Historic Preservation
____	Boating & Waterways, Department of	____	Office of Public School Construction
____	California Emergency Management Agency	____	Parks & Recreation, Department of
____	California Highway Patrol	____	Pesticide Regulation, Department of
X	Caltrans District # 7	X	Public Utilities Commission
____	Caltrans Division of Aeronautics	X	Regional WQCB # 4
____	Caltrans Planning	____	Resources Agency
____	Central Valley Flood Protection Board	____	Resources Recycling and Recovery, Department of
____	Coachella Valley Mtns. Conservancy	____	S.F. Bay Conservation & Development Comm.
____	Coastal Commission	____	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____	Colorado River Board	____	San Joaquin River Conservancy
____	Conservation, Department of	____	Santa Monica Mtns. Conservancy
____	Corrections, Department of	____	State Lands Commission
____	Delta Protection Commission	____	SWRCB: Clean Water Grants
____	Education, Department of	____	SWRCB: Water Quality
____	Energy Commission	____	SWRCB: Water Rights
X	Fish & Game Region # 5	____	Tahoe Regional Planning Agency
____	Food & Agriculture, Department of	____	Toxic Substances Control, Department of
____	Forestry and Fire Protection, Department of	____	Water Resources, Department of
____	General Services, Department of		
____	Health Services, Department of	____	Other:
____	Housing & Community Development	____	Other:
____	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date May 22, 2019 Ending Date June 21, 2019

Lead Agency (Complete if applicable):

Consulting Firm: MIG, Inc
Address: 537 S. Raymond Avenue
City/State/Zip: Pasadena CA 91105
Contact: Lisa Brownfield
Phone: (626)744-9872

Applicant: Evergreen Investment Partners, LLC
Address: 27702 Crown Valley Parkway, Suite 04-197
City/State/Zip: Ladera Ranch, CA 92694
Phone: (626) 710-6377

Signature of Lead Agency Representative: Sheri Bunnje **Date:** May 20, 2019

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

NOP Distribution List

County: Los Angeles

SCH# 2019050016

Resources Agency

- [■] **Resources Agency** Nadell Gayou
- [ ] **Dept. of Boating & Waterways** Denise Peterson
- [ ] **California Coastal Commission** Allyson Hitt
- [ ] **Colorado River Board** Elsa Contreras
- [ ] **Dept. of Conservation** Crina Chan
- [■] **Cal Fire** Dan Foster
- [ ] **Central Valley Flood Protection Board** James Herota
- [ ] **Office of Historic Preservation** Ron Parsons
- [■] **Dept of Parks & Recreation** Environmental Stewardship Section
- [ ] **S.F. Bay Conservation & Dev't. Comm.** Steve Goldbeck
- [ ] **Dept. of Water Resources** Resources Agency Nadell Gayou

Fish and Wildlife

- [ ] **Depart. of Fish & Wildlife** Scott Flint Environmental Services Division
- [ ] **Fish & Wildlife Region 1** Curt Babcock
- [ ] **Fish & Wildlife Region 1E** Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2** Jeff Drongesen
- [ ] **Fish & Wildlife Region 3** Craig Weightman
- [ ] **Fish & Wildlife Region 4** Julie Vance
- [■] **Fish & Wildlife Region 5** Leslie Newton-Reed Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6** Tiffany Ellis Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M** Heidi Calvert Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M** William Paznokas Marine Region

Other Departments

- [ ] **California Department of Education** Lesley Taylor
- [■] **OES (Office of Emergency Services)** Monique Wilber
- [ ] **Food & Agriculture** Sandra Schubert Dept. of Food and Agriculture
- [ ] **Dept. of General Services** Cathy Buck Environmental Services Section
- [■] **Housing & Comm. Dev.** CEQA Coordinator Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission** Erik Vink
- [ ] **Delta Stewardship Council** Anthony Navasero
- [ ] **California Energy Commission** Eric Knight
- [■] **Native American Heritage Comm.** Debbie Treadway
- [■] **Public Utilities Commission** Supervisor
- [ ] **Santa Monica Bay Restoration** Guangyu Wang
- [ ] **State Lands Commission** Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)** Cherry Jacques

Cal State Transportation Agency CalSTA

- [ ] **Caltrans - Division of Aeronautics** Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR** Christian Bushong
- [■] **California Highway Patrol** Suzann Ikeuchi Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1** Rex Jackman
- [ ] **Caltrans, District 2** Marcelino Gonzalez
- [ ] **Caltrans, District 3** Susan Zanchi
- [ ] **Caltrans, District 4** Patricia Maurice
- [ ] **Caltrans, District 5** Larry Newland
- [ ] **Caltrans, District 6** Michael Navarro
- [■] **Caltrans, District 7** Dianna Watson
- [ ] **Caltrans, District 8** Mark Roberts
- [ ] **Caltrans, District 9** Gayle Rosander
- [ ] **Caltrans, District 10** Tom Dumas
- [ ] **Caltrans, District 11** Jacob Armstrong
- [ ] **Caltrans, District 12** Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight** Jack Wursten
  - [ ] **Transportation Projects** Nesamani Kalandiyur
  - [■] **Industrial/Energy Projects** Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery** Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board** Regional Programs Unit Division of Financial Assistance
- [■] **State Water Resources Control Board** Cindy Forbes – Asst Deputy Division of Drinking Water
- [ ] **State Water Resources Control Board Div. Drinking Water #_____**
- [ ] **State Water Resources Control Board** Student Intern, 401 Water Quality Certification Unit Division of Water Quality
- [ ] **State Water Resouces Control Board** Phil Crader Division of Water Rights
- [ ] **Dept. of Toxic Substances Control Reg. #_____** CEQA Tracking Center
- [ ] **Department of Pesticide Regulation** CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1** Cathleen Hudson North Coast Region (1)
- [ ] **RWQCB 2** Environmental Document Coordinator San Francisco Bay Region (2)
- [ ] **RWQCB 3** Central Coast Region (3)
- [■] **RWQCB 4** Teresa Rodgers Los Angeles Region (4)
- [ ] **RWQCB 5S** Central Valley Region (5)
  - [ ] **RWQCB 5F** Central Valley Region (5) Fresno Branch Office
  - [ ] **RWQCB 5R** Central Valley Region (5) Redding Branch Office
- [ ] **RWQCB 6** Lahontan Region (6)
  - [ ] **RWQCB 6V** Lahontan Region (6) Victorville Branch Office
- [ ] **RWQCB 7** Colorado River Basin Region (7)
- [ ] **RWQCB 8** Santa Ana Region (8)
- [ ] **RWQCB 9** San Diego Region (9)

- [ ] **Other** _____

_____

_____

- [■] San Gabriels & Lower LA River Conservancy

Last Updated 5/22/18

DEPARTMENT OF TRANSPORTATION
DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-9140
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

June 24, 2019

Sheri Bermejo
City of Monrovia
415 S. Ivy Avenue
Monrovia, CA 91016-2888

RE: The Arroyo at Monrovia Station Specific Plan – Notice of Preparation (NOP)
SCH # 2019050016
GTS # 07-LA-2019-02535
LA-210/PM: R 33.706

Dear Ms. Sheri Bermejo:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-mentioned Notice of Preparation (NOP). The Arroyo at Monrovia Station Specific Plan would facilitate the construction of a mixed-use structure to include a 302-unit, six-story apartment complex with 7,080 square feet of retail flex space associated with three live/work units; 5,541 square feet of public space; and a seven-level (six-story) partially underground parking structure with 500 parking spaces. The retail flex space may be re-purposed for eight live/work units if retail does not occur. A range of studios, and one-bedroom and two-bedroom apartments are proposed. Fifteen of the residential units would be dedicated as Very Low-Income affordable units.

After reviewing the Notice of Preparation Caltrans has the following comments:

- Please include traffic analysis with the proposed Environmental Impact Report (EIR). Because of this project's size, location, and potential impact to State facilities, Caltrans suggests the proposed Traffic Impact Analysis (TIA) include the following areas of interest:

  - Interstate-210 and Huntington Rd. Westbound Onramp and Offramp
  - Interstate-210 and Huntington Rd. Eastbound Onramps and Offramp
  - Interstate-210 and South Myrtle Ave. Westbound Onramp and Offramp
  - Interstate-210 and South Myrtle Ave. Eastbound Onramp and Offramp

- Caltrans recommends that Highway Capacity Manual (HCM) methodology be used when assessing the impact a project may have on the State Highway System. For a traffic impact study of freeway mainline, weave, merge and diverge segments, the methodologies in Chapter

12, 13, and 14 of the Highway Capacity Manual (HCM) 6th edition are limited to under saturated flow conditions. When a freeway facility has oversaturated conditions, Chapter 10 is recommended to be used to determine a more precise density. It is acknowledged that there are limitations of the HCM methodology and it is recommended to use a traffic simulation model for the analysis.

The impact is considered to be significant, if the traffic generated by the project (a) causes one or more freeway segment's demand to exceed capacity (congested flow); or (b) when the segment is already congested, causes an increase in the demand/capacity ratio of greater than 1%.

Impacts to off-ramps are considered significant if the traffic generated by the project causes queueing that: (a) exceeds 85% of the off-ramp's storage capacity; or (b) when an auxiliary lane is present, exceeds the lesser of one-half the length of auxiliary lane or 1,000 feet.

When analyzing intersections please consider utilizing Synchro 10. Also, for intersection analysis, instead of using signal timing optimization for matching existing field conditions, please use actual traffic signal timing.

Caltrans is moving towards replacing Level of Service (LOS) with Vehicle Miles Traveled (VMT) when evaluating traffic impact. For any future project we encourage the Lead Agency to integrate transportation and land use in a way that reduces VMT and Greenhouse Gas (GHG) emissions by facilitating the provision of more proximate goods and services to shorten trip lengths and achieve a high level of non-motorized travel and transit use.

As required by SB 743, Caltrans recommends the Lead Agency develop a verifiable performance-based Vehicle Miles Travelled (VMT) criteria.

Further information included for your consideration;

Caltrans seeks to promote safe, accessible multimodal transportation. Methods to reduce pedestrian and bicyclist exposure to vehicles improve safety by lessening the time that the user is in the likely path of a motor vehicle. These methods include the construction of physically separated facilities such as sidewalks, raised medians, refuge islands, and off-road paths and trails, or a reduction in crossing distances through roadway narrowing.

Caltrans recommends the project to consider the use of methods such as, but not limited to, pedestrian and bicyclist warning signage, flashing beacons, crosswalks, signage and striping, be used to indicate to motorists that they should expect to see and yield to pedestrians and bicyclists. Visual indication from signage can be reinforced by road design features such as lane widths, landscaping, street furniture, and other design elements.

As a reminder, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods.

We look forward to reviewing this project's future EIR and will provide additional comments at

that time, if warranted. If you have any questions, please contact Reece Allen, the project coordinator, at reece.allen@dot.ca.gov, and refer to GTS # 07-LA-2019-02535

Sincerely,

MIYA EDMONSON
IGR/CEQA Branch Chief
cc: Scott Morgan, State Clearinghouse

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

RECEIVED
JUN 11 2019
Dept of Community Development
City of Monrovia

June 11, 2019

SENT VIA USPS AND E-MAIL:
sbermejo@ci.monrovia.ca.us
Sheri Bermejo, Planning Division Manager
City of Monrovia, Community Development Department
415 South Ivy Avenue
Monrovia, CA 91016

Notice of Preparation of a Draft Environmental Impact Report for The Arroyo at Monrovia Station Specific Plan

The South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. South Coast AQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the Proposed Project that should be included in the Draft Environmental Impact Report (EIR). Please send South Coast AQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to South Coast AQMD. Please forward a copy of the Draft EIR directly to South Coast AQMD at the address shown in the letterhead. **In addition, please send with the Draft EIR all appendices or technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files[1]. These include emission calculation spreadsheets and modeling input and output files (not PDF files). Without all files and supporting documentation, South Coast AQMD staff will be unable to complete our review of the air quality analyses in a timely manner. Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

South Coast AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. South Coast AQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from South Coast AQMD's Subscription Services Department by calling (909) 396-3720. More guidance developed since this Handbook is also available on South Coast AQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). South Coast AQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

South Coast AQMD has also developed both regional and localized significance thresholds. South Coast AQMD staff requests that the Lead Agency quantify criteria pollutant emissions and compare the results

[1] Pursuant to the CEQA Guidelines Section 15174, the information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public. Placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR. Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be readily available for public examination and shall be submitted to all clearinghouses which assist in public review.

to South Coast AQMD's CEQA regional pollutant emissions significance thresholds to determine air quality impacts. South Coast AQMD's CEQA regional pollutant emissions significance thresholds can be found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. In addition to analyzing regional air quality impacts, South Coast AQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Proposed Project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by South Coast AQMD staff or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis.

Mobile Source Health Risk Assessment

Notwithstanding the court rulings, South Coast AQMD staff recognizes that the Lead Agencies that approve CEQA documents retain the authority to include any additional information they deem relevant to assessing and mitigating the environmental impacts of a project. Because of South Coast AQMD staff's concern about the potential public health impacts of siting sensitive populations within close proximity of freeways and other sources of air pollution, South Coast AQMD staff recommends that, prior to approving the project, Lead Agencies consider the impacts of air pollutants on people who will live in a new project and provide mitigation where necessary.

When specific development is reasonably foreseeable as result of the goals, policies, and guidelines in the Proposed Project, the Lead Agency should identify any potential adverse health risk impacts using its best efforts to find out and a good-faith effort at full disclosure in the CEQA document. Based on a review of aerial photographs and Figure 1 in the Notice of Preparation, South Coast AQMD staff found that the Proposed Project will be located in proximity to Interstate 210 (I-210). Because of the proximity to the existing freeway and a potential source of air pollution, residents at the Proposed Project[2] would be exposed to diesel particulate matter (DPM), which is a toxic air contaminant and a carcinogen. Diesel particulate matter emitted from diesel powered engines (such as trucks) has been classified by the state as a toxic air contaminant and a carcinogen. Since future residences at the Proposed Project would be exposed to toxic emissions from the nearby sources of air pollution (e.g., diesel fueled highway vehicles and locomotives), South Coast AQMD staff recommends that the Lead Agency conduct a health risk assessment (HRA)[3] to disclose the potential health risks to the residents in the Draft EIR[4].

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[2]According to the Project Description in the Notice of Preparation, the Proposed Project would include, among others, construction of 302 residential units on 2.9 acres.

[3] South Coast Air Quality Management District. "*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis.*" Accessed at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis.

Guidance Regarding Residences Sited Near a High-Volume Freeway or Other Sources of Air Pollution
South Coast AQMD staff recognizes that there are many factors Lead Agencies must consider when making local planning and land use decisions. To facilitate stronger collaboration between Lead Agencies and the South Coast AQMD to reduce community exposure to source-specific and cumulative air pollution impacts, the South Coast AQMD adopted the Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning in 2005. This Guidance Document provides suggested policies that local governments can use in their General Plans or through local planning to prevent or reduce potential air pollution impacts and protect public health. South Coast AQMD staff recommends that the Lead Agency review this Guidance Document as a tool when making local planning and land use decisions. This Guidance Document is available on South Coast AQMD's website at: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf. Additional guidance on siting incompatible land uses (such as placing homes near freeways or other polluting sources) can be found in the California Air Resources Board's (CARB) *Air Quality and Land Use Handbook: A Community Health Perspective*, which can be found at: http://www.arb.ca.gov/ch/handbook.pdf. Guidance[5] on strategies to reduce air pollution exposure near high-volume roadways can be found at: https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF.

Mitigation Measures
In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize these impacts. Pursuant to CEQA Guidelines Section 15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project, including:

- Chapter 11 of South Coast AQMD's CEQA Air Quality Handbook
- South Coast AQMD's CEQA web pages available here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies
- South Coast AQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities
- South Coast AQMD's Mitigation Monitoring and Reporting Plan (MMRP) for the 2016 Air Quality Management Plan (2016 AQMP) available here (starting on page 86): http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf
- California Air Pollution Control Officers Association (CAPCOA)'s *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

As stated above, the Proposed Project is located in proximity to I-210. Many strategies are available to reduce exposure, including, but are not limited to, building filtration systems with Minimum Efficiency Reporting Value (MERV) 13 or better, or in some cases, MERV 15 or better is recommended; building

[4] South Coast AQMD has developed the CEQA significance threshold of 10 in one million for cancer risk. When South Coast AQMD acts as the Lead Agency, South Coast AQMD staff conducts a HRA, compares the maximum cancer risk to the threshold of 10 in one million to determine the level of significance for health risk impacts, and identifies mitigation measures if the risk is found to be significant.

[5] In April 2017, CARB published a technical advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory*, to supplement CARB's Air Quality and Land Use Handbook: A Community Health Perspective. This technical advisory is intended to provide information on strategies to reduce exposures to traffic emissions near high-volume roadways to assist land use planning and decision-making in order to protect public health and promote equity and environmental justice. The technical advisory is available at: https://www.arb.ca.gov/ch/landuse.htm.

design, orientation, location; vegetation barriers or landscaping screening, etc. Because of the potential adverse health risks involved with siting sensitive receptors near freeways and sources of air pollution, it is essential that any proposed strategy must be carefully evaluated before implementation.

In the event that enhanced filtration units are installed at the Proposed Project either as a mitigation measure or project design feature requirement, South Coast AQMD staff recommends that the Lead Agency consider the limitations of the enhanced filtration. For example, in a study that South Coast AQMD conducted to investigate filters[6], a cost burden is expected to be within the range of $120 to $240 per year to replace each filter. The initial start-up cost could substantially increase if an HVAC system needs to be installed. In addition, because the filters would not have any effectiveness unless the HVAC system is running, there may be increased energy costs to the residents. It is typically assumed that the filters operate 100 percent of the time while residents are indoors, and the environmental analysis does not generally account for the times when the residents have their windows or doors open or are in common space areas of the project. In addition, these filters have no ability to filter out any toxic gases from vehicle exhaust. Therefore, the presumed effectiveness and feasibility of any filtration units should be carefully evaluated in more detail prior to assuming that they will sufficiently alleviate exposures to toxic emissions.

Additionally, after enhanced filtration units are installed at the Proposed Project, and to ensure they are enforceable throughout the lifetime of the Proposed Project as well as effective in reducing exposures to DPM emissions, South Coast AQMD staff recommends that the Lead Agency provide additional details regarding the ongoing, regular maintenance of filters in the Draft EIR. To facilitate a good faith effort at full disclosure and provide useful information to future residents who will live and/or work at the Proposed Project, the Draft EIR should include the following information, at a minimum:

- Disclosure on potential health impacts to prospective residents from living and/or working in proximity to freeways, and the reduced effectiveness of air filtration system when windows are open and when tenants are outdoor;
- Identification of the responsible implementing and enforcement agency such as the Lead Agency for ensuring that enhanced filters are installed on-site at the Proposed Project before a permit of occupancy is issued;
- Identification of the responsible implementing and enforcement agency such as the Lead Agency's building and safety inspection unit to provide periodic, regular inspection on filters;
- Provide information and guidance to the Project developer or proponent on the importance of filter installation and ongoing maintenance;
- Provide information to residents about where the MERV filers can be purchased;
- Disclosure on increased costs for purchasing enhanced filtration systems to prospective residents;
- Disclosure on increased energy costs for running the HVAC system with MERV filters to prospective residents;
- Disclosure on recommended schedules (e.g., once a year or every six months) for replacing the enhanced filtration units to prospective residents;
- Identification of the responsible entity such as residents, tenants, Homeowner's Association (HOA) or property management to ensure filters are replaced on time, if appropriate and feasible;
- Develop ongoing cost sharing strategies between the HOA and residents/tenants, if available, for replacing the enhanced filtration units;
- Set up criteria for assessing progress in installing and replacing the enhanced filtration units; and

[6] This study evaluated filters rated MERV 13 or better. Accessed at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/aqmdpilotstudyfinalreport.pdf. Also see 2012 Peer Review Journal article by South Coast AQMD: http://d7.iqair.com/sites/default/files/pdf/Polidori-et-al-2012.pdf.

- Set up process for evaluating the effectiveness of the enhanced filtration units at the Proposed Project.

Alternatives

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires the consideration and discussion of alternatives to the project or its location which are capable of avoiding or substantially lessening any of the significant effects of the project. The discussion of a reasonable range of potentially feasible alternatives, including a "no project" alternative, is intended to foster informed decision-making and public participation. Pursuant to CEQA Guidelines Section 15126.6(d), the Draft EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

Permits

In the event that the Proposed Project requires a permit from South Coast AQMD, South Coast AQMD should be identified as a responsible agency for the Proposed Project. For more information on permits, please visit South Coast AQMD webpage at: http://www.aqmd.gov/home/permits. Questions on permits can be directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385.

Data Sources

South Coast AQMD rules and relevant air quality reports and data are available by calling South Coast AQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available at South Coast AQMD's webpage at: http://www.aqmd.gov.

South Coast AQMD staff is available to work with the Lead Agency to ensure that project air quality impacts are accurately evaluated and any significant impacts are mitigated where feasible. If you have any questions regarding this letter, please contact me at lsun@aqmd.gov or call me at (909) 396-3308.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
LAC190528-03
Control Number

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

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www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

June 6, 2019

Ref. DOC: 5163892

RECEIVED
JUN 10 2019
Dept of Community Development
City of Monrovia

Ms. Sheri Bermejo, Planning Division Manager
Department of Community Development
City of Monrovia
415 South Ivy Avenue
Monrovia, CA 91016

Dear Ms. Bermejo:

NOP Response for the Arroyo at Monrovia Station Specific Plan

The Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report (NOP) for the subject project on May 23, 2019. The proposed project is located within the jurisdictional boundaries of District No. 15. We offer the following comments regarding sewerage service:

1. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts' Monrovia Outfall Trunk Sewer, located in Peck Road at Duarte Road. The Districts' 24-inch diameter trunk sewer has a capacity of 6.1 million gallons per day (mgd) and conveyed a peak flow of 3.2 mgd when last measured in 2013.

2. The wastewater generated by the proposed project will be treated at the San Jose Creek Water Reclamation Plant (WRP) located adjacent to the City of Industry, which has a capacity of 100 mgd and currently processes an average flow of 58.5 mgd. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP are diverted to and treated at the Joint Water Pollution Control Plant in the City of Carson.

3. The expected increase in average wastewater flow from the project, described in the notice as 305 residential apartments. 7,080 square feet of retail space, and 2.379 square feet of office space, is 47,664 gallons per day. For a copy of the Districts' average wastewater generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

4. The Districts are empowered by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the Districts' Sewerage System for increasing the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before this project is permitted to discharge to the Districts'

Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Wastewater & Sewer Systems, and click on Connection Fee, Service Charge and More. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more specific information regarding the connection fee application procedure and fees, the developer should contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.

5. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:dc

cc: A. Schmidt
A. Howard

DOC 5166597.D15

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone (916) 373-3710
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RECEIVED
JUN 10 2019
Dept of Community Development
City of Monrovia

June 7, 2019

Sheri Bermejo
City of Monrovia
415 S. Ivy Avenue
Monrovia, CA 91016-2888

RE: SCH# 2019050016 The Arroyo at Monrovia Station Specific Plan, Los Angeles County

Dear Ms. Bermejo:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

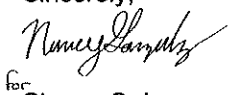
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Steven.Quinn@nahc.ca.gov.

Sincerely,



for
Steven Quinn
Associate Governmental Program Analyst

cc: State Clearinghouse

LEGACY PARTNERS

March 29, 2019

Mr. Oliver Chi
City Manager
City of Monrovia
415 South Ivy Avenue
Monrovia, CA 91016

RE: Monrovia Station Square Environs

Dear Oliver,

I wanted to follow up on our meeting this past month regarding the progress on our MODA project at Monrovia Station Square, as well as proposed developments in the surrounding area. As we discussed, while it has taken considerable effort to build awareness for the project and Monrovia Station Square neighborhood, we are pleased with the response and leasing efforts to-date.

We believe that the proposed mixed-use residential projects will add critical mass to the neighborhood and help bring about a sense of place for Monrovia Station Square. With that said, it is important that current sponsors advance projects that are thoughtful in the planning and design; and sensitive to the residents who are now establishing themselves in the neighborhood. As we discussed, by the time the next project mixed use project starts construction, MODA will be home to over 400 new Monrovia residents. In addition to being key stakeholder, we are a voice for these future residents, so that the City may address project related impacts (construction and on-going) and require appropriate mitigation to lessen potential impacts.

The following are general considerations that we discussed be studied during the review of the various Station Square proposals:

Design & Operations related:

- Project height, massing, and elevation break up.
- View/ Shade/Shadow considerations.
- Offsite parking restrictions.
- Onsite provisions for move-in/move-out staging and trash pickup.
- Requirement for undergrounding utility lines.
- Sidewalk and Street Tree Improvement consistent with MODA frontage.

Construction related:

- Construction ingress/egress and staging- should not be allowed on Pomona or Magnolia south of Pomona.
- Construction labor parking plan- with parking restrictions on Pomona or Magnolia south of Pomona.
- Understand truck queuing and idling plan with restrictions on Pomona or Magnolia south of Pomona.
- Limitations on Construction Hours and Days.

- Dust control and impact/mitigation on/for neighboring properties.
- Understand construction schedules-estimated start and duration.

While this is not meant to be an exhaustive list, we think this will give a good basis for issues for the City to raise with sponsors. We look forward to engaging with individual project sponsors as well to understand their specific plans better.

Monrovia Station Square is a unique and rare opportunity to create a vibrant new mixed-use/transit-oriented neighborhood. We look forward to participating in the review process with the hope of creating a special community consistent with the quality and sense of place found in the City of Monrovia.

I look forward to our ongoing discussions.

Best Regards,

Timothy J. O'Brien
Sr. Managing Director

Cc: Mayor Tom Adams, City of Monrovia
Craig Jimenez, City of Monrovia
Lauren Vasquez, City of Monrovia
David Pinto, Legacy Partners

LEGACY PARTNERS

APPENDIX C
AIR QUALITY IMPACT
ANALYSIS REPORT

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C1
AIR QUALITY IMPACT ANALYSIS REPORT

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Arroyo at Monrovia Station Project

Air Quality and Greenhouse Gas Analysis

April 2019

Prepared for:

Evergreen Investment Partners, LLC
27702 Crown Valley Parkway, Suite 04-197
Ladera Ranch, California 92694

Prepared by:

MIG
537 South Raymond Avenue
Pasadena, California 91105

This document is formatted for double-sided printing to conserve natural resources.

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Appendices

Appendix A: CalEEMod Output Files

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
§	section
° F	degrees Fahrenheit
µg	micrograms
AADT	Annual average daily trips
AB	Assembly Bill
ACC	Advanced Clean Cars
ADT	Average daily trips
AERMAP	terrain preprocessor for AERMOD
AERMET	AERMOD Meteorological Preprocessor
AERMOD	Atmospheric Dispersion Modeling System
AQ	air quality
AQMP	Air Quality Management Plan
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAU	Business As Usual
BTU	British Thermal Unit
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CBSC	California Building Standards Commission
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	methane
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	Carbon Dioxide
CPF	cancer potency factor
CRP	Coating Restriction Plan
DPM	diesel particulate matter
ED	exposure duration

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
EF	exposure frequency
EIR	Environmental Impact Report
EMFAC	Emission Factors Model
EO	Executive Order
F	Fahrenheit
FAH	Fraction of Time at Home
GHG	Greenhouse Gas(es)
GVWR	gross vehicle weight rating
GWh	Gigawatt-hours
GWP	Global Warming Potential
H_2S	hydrogen sulfide
HAP	Hazardous Air Pollutants
HARP	Hot Spots Analysis and Reporting Program
HESIS	Hazard Evaluation System and Information Service
HFCs	hydrofluorocarbons
HHDT	heavy-heavy duty trucks
HI	Hazard Index
HRA	Health Risk Assessment
HVAC	Heating, ventilation, and air conditioning
I	Interstate
IAQ	Indoor Air Quality
IARC	International Agency for Research on Cancer
kBtu	Thousand British Thermal Units
kg	kilogram
kWH	kilowatt-hours
LCFS	Low Carbon Fuel Standard
LDA	passenger cars
LDT1	light-duty trucks, weight class 0 - 3,750 pounds
LDT2	light-duty trucks, weight class 3,751-5,750 pounds
LEV	Low Emission Vehicle
LHDT1	light-heavy-duty trucks, weight class 8,501-10,000 pounds
LHDT2	light-heavy-duty trucks, weight class 10,001-14,000 pounds
LOS	Level of Service

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
LST	Localized Significance Threshold
m^3	cubic meter
MATES	Multiple Air Toxics Exposure Study
MDV	medium-duty truck
MEIR	Maximally Exposed Individual Resident
MERV	Minimum Efficiency Rating Value
mg	milligram
MH	motor home
MHDT	medium-heavy duty diesel truck
mph	miles per hour
MPO	Metropolitan Planning Organization
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalents
N_2O	nitrous dioxide
NAAQS	National Ambient Air Quality Standards
NO	nitrogen oxide
No.	number
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_x	oxides of nitrogen
NTP	U.S. National Toxicology Program
O_3	ozone
OBUS	motor coach bus
OEHHA	Office of Environmental Health Hazard Assessment
PFCs	perfluorocarbons
PM	particulate matter
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
ppm	parts per million
RAST	Risk Assessment Stand Alone Tool
REL	Reference Exposure Level
ROG	reactive organic gases
ROW	right-of-way
RPS	Renewable Portfolio Standard

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
RTP	Regional Transportation Plan
SB	Senate Bill
SBUS	school bus
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_4^{2-}	sulfates
SO_x	oxides of sulfur
SRA	Source Receptor Area
TAC	Toxic Air Contaminants
TIA	Traffic Impact Analysis
U.S.	United States
U.S. EPA	United States Environmental Protection Agency
UBUS	urban bus
UTM	Universal Transverse Mercator
V.	Versus
VMT	Vehicle Miles Traveled
VOC	volatile organic compounds
Yr	year
ZEV	Zero Emission Vehicle

1 INTRODUCTION

Evergreen Investment Partners, LLC has submitted an application to the City of Monrovia for its proposed 2.90-acre mixed-use residential development (proposed Project). The Project area currently comprises nearly one whole City block, except for a 0.14-acre single-family residential parcel. The Project area is bounded by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west. The METRO Monrovia Gold Line Station is located approximately 385 feet to the south of Project area and Interstate 210 (I-210) is located on the north side of West Evergreen Avenue, across from the Project area. The Project involves the development of a 302-unit, apartment complex and an eight-level (seven-story) partially underground parking structure. The proposed development also includes 7,080 square feet of retail space.

The current land uses within the proposed Project site include a mix of single-family residential (8 total dwelling units), two industrial parcels (approximately 44,240 square feet), vacant lot, and private parking lot. Project development would generate emissions of air quality and GHG pollutants that could affect air quality and/or contribute to global climate change. MIG, Inc. (MIG) has prepared this Air Quality and Greenhouse Gas Impact Analysis Report (Report) at the request of Evergreen Investment Partners. This Report evaluates the potential construction- and operational-related air quality and GHG impacts of the proposed Project using specific information provided by Evergreen Investment Partners. Where necessary, MIG has supplemented available information with standardized sources of information, such as model assumptions pertaining to construction equipment activity levels. In general, this Report evaluates the potential "worst-case" conditions associated with the proposed Project's construction and operational emissions levels to ensure a conservative (i.e., likely to overestimate) assessment of potential air quality and GHG impacts is presented.

This Report is intended for use by the Lead Agency to assess the potential air quality and GHG impacts of the proposed Project in compliance with the California Environmental Quality Act (CEQA; PRC §21000 et seq.) and the State CEQA Guidelines (14 CCR §15000 et seq.), particularly in respect to the air quality and GHG issues identified in Appendix G of the State CEQA Guidelines.

1.1 REPORT ORGANIZATION

This Report is organized as follows:

- **Chapter 1, Introduction,** explains the contents of this Report and its intended use.
- **Chapter 2, Air Quality Setting and Regulatory Framework,** provides pertinent background information on the air quality, describes the existing air quality setting of the proposed Project, and provides information on the federal, state, and local regulations that govern the proposed Project's air quality setting and potential air quality impacts.
- **Chapter 3, GHG Setting and Regulatory Framework,** provides pertinent background information on GHG and climate change, describes the existing GHG setting of the proposed Project, and provides information on the federal, state, and local regulations that govern the proposed Project's GHG setting and potential GHG impacts.
- **Chapter 4, Proposed Project Description**, provides an overview of the construction and operational activities associated with the proposed Project.

- **Chapter 5, Air Quality Impact Assessment,** identifies the potential construction and operational air quality impacts of the proposed Project and evaluates these effects in accordance with Appendix G of the State CEQA Guidelines.
- **Chapter 6, GHG Impact Assessment,** identifies the potential construction and operational GHG impacts of the proposed Project and evaluates these effects in accordance with Appendix G of the State CEQA Guidelines.
- **Chapter 7, Report Preparers and References,** list the individuals involved, and the references used, in the preparation of this Report.

2 AIR QUALITY SETTING AND REGULATORY FRAMEWORK

This chapter provides information on the environmental and regulatory air quality setting of the proposed Project. Information on existing air quality conditions, federal and state ambient air quality standards, and pollutants of concern was obtained from the U.S. Environmental Protection Agency (U.S. EPA), CARB, and SCAQMD.

2.1 ENVIRONMENTAL SETTING

Air quality is a function of pollutant emissions and topographic and meteorological influences. The physical features and atmospheric conditions of a landscape interact to affect the movement and dispersion of pollutants and determine its air quality.

2.1.1 Regulated Air Pollutants

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six common air pollutants: ozone (O_3), particulate matter (PM), which consists of "inhalable coarse" PM (particles with an aerodynamic diameter between 2.5 and 10 microns in diameter, or PM_{10}) and "fine" PM (particles with an aerodynamic diameter smaller than 2.5 microns, or $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. The U.S. EPA refers to these six common pollutants as "criteria" pollutants because the agency regulates the pollutants on the basis of human health and/or environmentally-based criteria. CARB has established California Ambient Air Quality Standards (CAAQS) for the six common air pollutants regulated by the federal Clean Air Act (the CAAQS are more stringent than the NAAQS) plus the following additional air pollutants: hydrogen sulfide (H_2S), sulfates (SO_X), vinyl chloride, and visibility reducing particles. The NAAQS and CAAQS are shown in Table 2-1. A description of these regulated air pollutants is provided below.

- **Ground-level ozone**, or smog, is not emitted directly into the atmosphere. It is created from chemical reactions between oxides of nitrogen (NO_X) and volatile organic compounds (VOCs), also called reactive organic gases (ROG), in the presence of sunlight (U.S. EPA, 2017a). Thus, ozone formation is typically highest on hot sunny days in urban areas with NO_X and ROG pollution. Ozone irritates the nose, throat, and air pathways and can cause or aggravate shortness of breath, coughing, asthma attacks, and lung diseases such as emphysema and bronchitis.

Table 2-1: Summary of Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**CAAQS**		**NAAQS**		
		Concentration	**Method**	**Primary[5]**	**Secondary**	**Method**
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable PM_{10} [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		
Fine Particulate Matter($PM_{2.5}$) [9]	24 Hour	-	-	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12.0 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/ m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	-	Non-Dispersive Infrared Photometry (NDIR) -
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)	-	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/ m^3)		-	-	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.03 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	-	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	-	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) -
	3 Hour	-		-	0.5 ppm (1,300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[11]	-	
	Annual Arithmetic Mean	-		0.030 ppm (for certain areas)[11]	-	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	-	-	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average[10]	-		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			

Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography	
Source: CARB, 2016a.				

- **Particulate matter (PM)**, also known as particle pollution, is a mixture of extremely small solid and liquid particles made up of a variety of components such as organic chemicals, metals, and soil and dust particles (U.S. EPA, 2016a).
  - PM_{10}, also known as inhalable coarse, respirable, or suspended PM_{10}, consists of particles less than or equal to 10 micrometers in diameter (approximately 1/7th the thickness of a human hair). These particles can be inhaled deep into the lungs and possibly enter the blood stream, causing health effects that include, but are not limited to, increased respiratory symptoms (e.g., irritation, coughing), decreased lung capacity, aggravated asthma, irregular heartbeats, heart attacks, and premature death in people with heart or lung disease (U.S. EPA, 2016a).
  - $PM_{2.5}$, also known as fine PM, consists of particles less than or equal to 2.5 micrometers in diameter (approximately 1/30th the thickness of a human hair). These particles pose an increased risk because they can penetrate the deepest parts of the lung, leading to and exacerbating heart and lung health effects (U.S. EPA, 2016a).
- **Carbon Monoxide (CO)** is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Motor vehicles are the single largest source of carbon monoxide in the Basin. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can aggravate cardiovascular disease and cause headaches, dizziness, unconsciousness, and even death (U.S. EPA, 2016b).
- **Nitrogen Dioxide (NO_2)** is a by-product of combustion. NO_2 is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to ozone formation. NO_2 also contributes to the formation of particulate matter. NO_2 can cause breathing difficulties at high concentrations (U.S. EPA, 2016c).
- **Sulfur Dioxide (SO_2)** is one of a group of highly reactive gases known as oxides of sulfur (SO_X). Fossil fuel combustion in power plants and industrial facilities are the largest emitters of SO_2. Short-term effects of SO_2 exposure can include adverse respiratory effects such as asthma symptoms. SO_2 and other SO_X can react to form PM (U.S. EPA, 2016d).
- **Sulfates (SO_4^{2-})** are the fully oxidized ionic form of sulfur. SO_4^{2-} are primarily produced from fuel combustion. Sulfur compounds in the fuel are oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. Sulfate exposure can increase risks of respiratory disease (CARB, 2009a).
- **Lead** is primarily emitted from metal processing facilities (i.e. secondary lead smelters) and other sources such as manufacturers of batteries, paints, ink, ceramics, and ammunition. Historically, automobiles were the primary sources before lead was phased out of gasoline. The health effects of exposure to lead include gastrointestinal disturbances, anemia, kidney diseases, and potential neuromuscular and neurologic dysfunction. Lead is also classified as a probable human carcinogen (U.S. EPA, 2017b).

In addition to criteria air pollutants, the U.S. EPA and CARB have classified certain pollutants as hazardous air pollutants (HAPs) or toxic air contaminants (TACs), respectively. These pollutants can cause severe health effects at very low concentrations, and many are suspected or confirmed carcinogens. The U.S. EPA has identified 187 HAPs, including such substances as arsenic and chlorine; CARB considers all

U.S. EPA designated HAPS, as well as particulate emissions from diesel-fueled engines (DPM) and other substances, to be a TAC. Since CARB's list of TACs references and includes U.S. EPA's list of HAPs, this document uses the term TAC when referring to HAPs and TACs. A description of the TACs associated with the proposed Project and its vicinity is provided below.

- **Gasoline-Powered Mobile Sources.** According to the SCAQMD's *Multiple Air Toxics Exposure Study in the South Coast Air Basin* (SCAQMD 2015a), or MATES IV, gasoline-powered vehicles emit TACs, such as benzene, which can have adverse health risks. Gasoline-powered sources emit TACs in much smaller amounts than diesel-powered vehicles. The MATES IV study identifies that diesel emissions account for between 68% to 80% of the total air toxics and cancer risk in the Basin.
- **Diesel Particulate Matter (DPM).** Diesel engines emit both gaseous and solid material; the solid material is known as DPM. Almost all DPM is less than 1 µm in diameter, and thus is a subset of $PM_{2.5}$. DPM is typically composed of carbon particles and numerous organic compounds. Diesel exhaust also contains gaseous pollutants, including VOCs and NO_x. The primary sources of diesel emissions are ships, trains, trucks, rail yards and heavily traveled roadways. These sources are often located near highly populated areas, resulting in greater DPM related health consequences in urban areas. The majority of DPM is small enough to be inhaled into the lungs and what particles are not exhaled can be deposited on the lung surface and in the deepest regions of the lungs where the lung is most susceptible to injury. In 1998, CARB identified DPM as a toxic air contaminant based on evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure (CARB 2016c).
- **PM from Wheel-Rail Interaction.** PM may also be generated from friction between rail and locomotive wheels (wheel-rail interaction). This abrasion process can suspend metals such as iron, chromium, manganese, and copper in the form of PM (CARB 2019d, Loxham et al. 2013); however, the potential for PM to be generated is dependent on the weight of the train and the conditions of the wheels and track on which the train rides. The Metro Gold Line is commuter rail that consists of an Electric Multiple Unit locomotive system that is lighter than traditional diesel locomotive commuter and freight trains, and in new condition. Thus, while the Metro Gold Line may generate PM from wheel-rail interaction, this contribution is anticipated be minimal (i.e., would not have an appreciable effect on mass emission or health risk estimates) and this issue is not discussed further in this Report.

Common criteria air pollutants, such as ozone precursors, SO_2, and PM, are emitted by a large number of sources and have effects on a regional basis (i.e., throughout the Basin); other pollutants, such as HAPs, TACs, and fugitive dust, are generally not as prevalent and/or emitted by fewer and more specific sources. As such, these pollutants have much greater effects on local air quality conditions and local receptors.

2.1.2 Regional Air Pollutant Emissions Levels

CARB's estimate of the amount of emissions generated within the Basin in 2012, the most recent year for which data is available, is summarized in Table 2-2.

Table 2-2: South Coast Air Basin Emissions Summary							
Emissions Source	**2012 Pollutant Emissions (Tons Per Day)**						
	ROG	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**PM**	**CO**	**SO_X**
Stationary(A)	97	49	15	20	26	55	10
Area-wide(B)	115	21	28	93	175	54	1
Mobile(C)	256	445	22	36	37	2,004	7
Total(D)	468	514	65	148	238	2,113	17
Emissions Source	**2012 Pollutant Emissions (Tons Per Year)**						
	ROG	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**PM**	**CO**	**SO_X**
Stationary (A)	35,478	17,925	5,497	7,253	9,574	20,130	3,555
Area-wide (B)	42,026	7,523	10,370	33,821	63,849	19,728	186
Mobile (C)	93,334	162,294	7,884	13,104	13,447	731,442	2,398
Total (D)	170,838	187,741	23,751	54,177	86,870	771,300	6,139

Source: CARB 2016b, modified by MIG.

(A) Stationary sources include fuel combustion in stationary equipment or a specific type of facility such as printing and metals processing facilities. Concrete batching is a subset of stationary source emissions.

(B) Mobile sources include automobiles, trucks, and other vehicles intended for "on-road" travel and other self-propelled machines such as construction equipment and all-terrain vehicles intended for "off-road" travel.

(C) Area-wide sources include solvent evaporation (e.g., consumer products, painting, and asphalt paving) and miscellaneous processes such as residential space heating, fugitive windblown dust, and cooking.

(D) Totals may not equal due to rounding.

2.1.3 South Coast Air Basin Climate, Topography, and Meteorology

Los Angeles County and the broader Los Angeles Basin are defined by a semi-arid, Mediterranean climate with mild winters and warm summers. The San Gabriel, San Bernardino, and San Jacinto Mountains bound the Basin to the north and east trap ambient air and pollutants within the Los Angeles and Inland Empire valleys below.

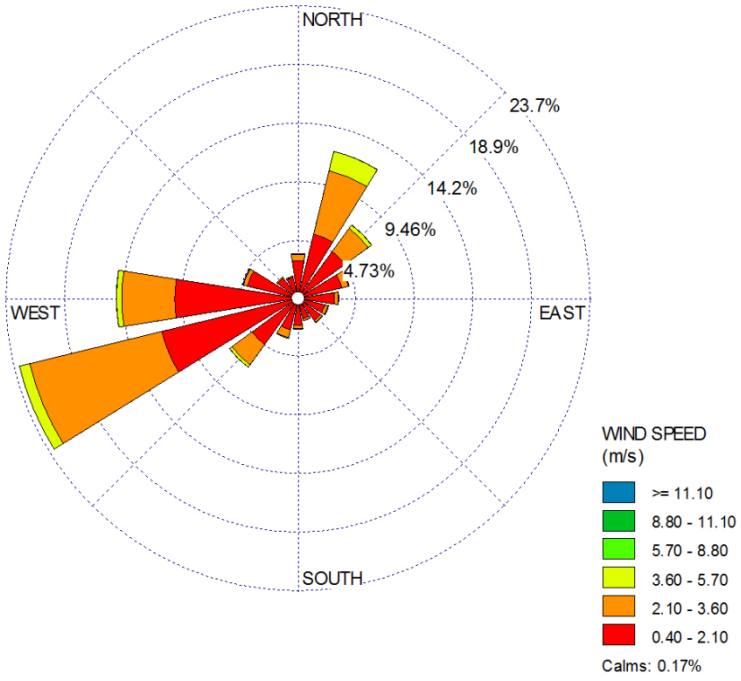
The City's climate, and that of Southern California in general, is generally controlled by the strength and position of the subtropical high pressure cell over the Pacific Ocean. It maintains moderate temperatures and comfortable humidity, and limits precipitation to a few storms during the winter rainy season. Temperatures are normally mild, excepting the summer months, which can bring temperatures well above 100 degrees Fahrenheit (° F). The annual average temperature in the Basin is approximately 62 degrees Fahrenheit. Near the City of Monrovia, winds are driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes while at night the wind generally slows and reverses direction traveling towards the sea. The frequency of calm winds (less than 2 miles per hour) is less than 10 percent, meaning there is little stagnation near the City, especially during busy daytime traffic hours; however, the Basin experiences temperature inversions which inhibit the dispersion of pollutants. Inversions may be either ground based or elevated. Ground-based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions can be generated by a variety of meteorological phenomena. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted.

City of Monrovia elevations range from approximately 440 feet above mean seal level (AMSL) in the southern portion of the City to approximately 1,240 feet AMSL in the northern portion of the City.

Portions of the City's sphere of influence include step hillsides and rugged terrain that can reach 1,800 feet AMSL. The proposed Project site is generally located at an approximate elevation of 450 feet AMSL.

The SCAQMD maintains publically available meteorological data for use in air quality analyses. The closest meteorological station to the proposed Project site is the Azusa meteorological station, located less than five miles to the east of the proposed Project. The SCAQMD Azusa meteorological station data includes five complete years of meteorological data from January 2012 to December 2016. The wind rose for the Azusa meteorological station data set is shown in Figure 2-1.

Figure 2-1 Wind Rose for Azusa Meteorological Station (Blowing From)



Source: SCAQMD 2018e

2.1.4 Regional Air Quality Conditions and Attainment Status

As described in Section 2.1.1 and shown in Table 2-1, the federal and state governments have established emission standards and limits for air pollutants which may reasonably be anticipated to endanger public health or welfare. These standards typically take one of two forms: standards or requirements that are applicable to specific types of facilities or equipment (e.g., petroleum refining, metal smelting), or concentration-based standards that are applicable to overall ambient air quality. Air quality conditions are best described and understood in the context of these standards; areas that meet, or attain, concentration-based ambient air quality standards are considered to have levels of pollutants in the ambient air that, based on the latest scientific knowledge, do not endanger public health or welfare.

The U.S. EPA, CARB, and the SCAQMD assess the air quality of an area by measuring and monitoring the amount of pollutants in the ambient air and comparing pollutant levels against NAAQS and CAAQS. Based on these comparisons, regions are classified into one of the following categories:

- **Attainment.** A region is "in attainment" if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, an area that has

been re-designated from nonattainment to attainment is classified as a "maintenance area" for 10 years to ensure that the air quality improvements are sustained.

- **Nonattainment.** If the NAAQS or CAAQS are exceeded for a pollutant, the region is designated as nonattainment for that pollutant. It is important to note that some NAAQS and CAAQS require multiple exceedances of the standard in order for a region to be classified as nonattainment. Federal and state laws require nonattainment areas to develop strategies, plans, and control measures to reduce pollutant concentrations to levels that meet, or attain, standards.
- **Unclassified.** An area is unclassified if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

Table 2-3 below summarizes the Basin's attainment status for criteria pollutants. The Basin is currently in nonattainment for state and federal ozone, state PM_{10}, and state and federal $PM_{2.5}$ standards.

Table 2-3: South Coast Air Basin Attainment Status

Pollutant	Federal	State
O_3 (1-hr)	Nonattainment	Nonattainment
O_3 (8-hr)	Nonattainment	Nonattainment
PM_{10} (24-hr and Annual)	Attainment	Nonattainment
$PM_{2.5}$ (24-hr)	Nonattainment	--
$PM_{2.5}$ (Annual)	Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
NO_2 (1-hr)	Attainment	Attainment
NO_2 (Annual)	Attainment (Maintenance)	Attainment
SO_2	Attainment	Attainment
Lead	Partial Nonattainment	Attainment
Visibility Reducing Particles	--	Unclassified
SO_4	--	Attainment
H_2S	--	Attainment

Source: SCAQMD, 2016a

Pollution problems in the Basin are caused by emissions within the area and the specific meteorology that promotes pollutant concentrations. Emissions sources vary widely from smaller sources such as individual residential water heaters and short-term grading activities to extensive operational sources including long-term operation of electrical power plants and other intense industrial use. Pollutants in the Basin are blown inward from coastal areas by sea breezes from the Pacific Ocean and are prevented from horizontally dispersing due to the surrounding mountains. This is further complicated by atmospheric temperature inversions that create inversion layers. The inversion layer in Southern California refers to the warm layer of air that lies over the cooler air from the Pacific Ocean. This is strongest in the summer and prevents ozone and other pollutants from dispersing upward. A ground-level surface inversion commonly occurs during winter nights and traps carbon monoxide emitted during the morning rush hour.

2.1.5 Local Air Quality Conditions

Air pollution levels are measured at monitoring stations located throughout the Basin. The Project site is located in SCAQMD Source Receptor Area (SRA) 9 – East San Gabriel Valley. The station closest to Monrovia is identified as the East San Gabriel Valley 1 Station (Station #060) by SCAQMD (CARB refers to this station as Azusa). The station is located less than four miles to the east of Monrovia's boundary and monitors CO, O_3, NO_2, PM_{10} and $PM_{2.5}$. This monitoring station represents the best approximation of the air quality conditions within the City.

Table 2-4 summarizes the published monitoring data from the East San Gabriel Valley 1 monitoring station from 2014 to 2016, the three most recent years for which verified, published data is available from the SCAQMD (2017 data was not yet available as of the time of writing of this Report). Table 2-4 shows that air quality standards at this location have been exceeded for $PM_{2.5}$, PM_{10}, and O_3. This is consistent with the entire Basin's classification as non-attainment for $PM_{2.5}$, PM_{10}, and O_3. As shown in Table 2-4:

- The maximum 1-hour and 8-hour CO concentration generally decreased from 2014 to 2016. There were no days in which CO standards were exceeded during this time period.
- The maximum 1-hour NO_2 concentration generally increased from 2014 to 2016, while the average annual NO_2 concentration generally decreased. There were no days in which NO_2 standards were exceeded during this time period.
- The maximum 1-hour and 8-hour O_3 concentration, as well as the number of days exceeding O_3 standards, generally increased from 2014 to 2016.
- The maximum 24-hour and average annual PM_{10} concentration fluctuated during the 2014 to 2016 period but there were no days/years in which the Federal PM_{10} standards were exceeded. The State PM_{10} annual standard was exceeded in 2014, 2015, and 2016; however, the annual average PM_{10} concentration and the number of days exceeding the state 24-hour standard generally decreased over this time period.
- The maximum 24-hour and average annual $PM_{2.5}$ concentration fluctuated during the 2014 to 2016 period but there were no years in which the Federal or State $PM_{2.5}$ annual average standards were exceeded. The Federal 24-hour $PM_{2.5}$ standard was exceeded once in 2015.

Table 2-4: 2014-2016 Local Air Quality Data for East San Gabriel Valley[(A)]				
Pollutant	**Ambient Air Standard**	**Year[(A)]**		
		2014	**2015**	**2016**
Ozone (O_3)				
Maximum 1-hour Concentration (ppm)		0.123	0.122	0.146
Maximum 8-hr Concentration (ppm)		0.092	0.096	0.106
Number of Days Exceeding State 1-hr Standard	>180 µg/m3	11	21	30
Number of Days Exceeding State 8-hr Standard	>137 µg/m3	20	28	40
Days Exceeding Federal 1-hr Standard	>0.124 ppm	0	0	4
Days Exceeding Federal 8-hr Standard	>0.070 ppm	11	27	39
Carbon Monoxide (CO)				
Maximum 1-hr Concentration (ppm)		2	2.1	1.3
Maximum 8-hr Concentration (ppm)		1.9	1.3	1.2
Days Exceeding State 1-hr Standard	>23,000 µg/m^3	--	--	--
Days Exceeding Federal/State 8-hr Standard	>10,000 µg/m^3	--	--	--
Days Exceeding Federal 1-hr Standard	>40,000 µg/m^3	--	--	--
Nitrogen Dioxide (NO_2)				
Maximum 1-hr Concentration (ppb)		70.2	71.0	74.2
Annual Arithmetic Mean Concentration (ppb)		17.8	15.4	16.6
Days Exceeding State 1-hr Standard	>180 µg/m^3	--	--	--
Coarse Particulate Matter (PM_{10})				
Maximum 24-hr Concentration (µg/m^3)		96	101	74
Annual Arithmetic Mean (µg/m^3)		44.1	37.1	33.7
Samples Exceeding State 24-hr Standard	>50 µg/m^3	22	12	12
Samples Exceeding Federal 24-hr Standard	>150 µg/m^3	0	0	0
Fine Particulate Matter ($PM_{2.5}$)				
Maximum 24-hr Concentration (µg/m^3)		32.4	44.3	32.17
Annual Arithmetic Mean (µg/m^3)		11.63	9.4	10.15
Samples Exceeding Federal 24-hr Standard	>35 µg/m^3	0	1	0

Source: SCAQMD 2018a, 2018b, 2018c
(A) "--" indicates data are not available.

2.2 LOCAL AIR QUALITY SETTING

The proposed Project is located in the City of Monrovia, in Los Angeles County. According to the City's General Plan, motor vehicles represent the major source of emissions within the City and the Basin. The proposed Project site consists of a mix of single-family residential (8 total dwelling units), two industrial parcels (approximately 39,500 square feet), vacant lot, and private parking lot. The site bounded by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west. The Project area has a current General Plan land use designation of Planned Development and is zoned Planned Development-12. The site is generally bordered by other commercial and industrial land uses with some residential uses nearby.

2.2.1 Existing Operations and Emissions Estimates

As described previously, the existing land uses in the Project area consists of a mix of single-family residential (8 total dwelling units), two industrial parcels (approximately 39,500 square feet), vacant lot, and private parking lot. These existing land uses generate emissions from the following sources:

- **Small "area" sources.** Existing land uses in the Project area generate emissions from small area sources including landscaping equipment and the use of consumer products such as paints, cleaners, and fertilizers that result in the evaporation of chemicals into the atmosphere during product use.
- **Energy use and consumption**. Existing land uses in the Project area generate emissions from the combustion of natural gas in water and space heating equipment, as well as industrial processes.
- **Mobile sources.** Existing land uses in the Project area generate emissions from vehicles travelling to and from the plan area.

The Project area's existing emissions were estimated using CalEEMod, V. 2016.3.2. The existing emissions were estimated using default data assumptions provided by CalEEMod, with the following Project-specific modifications:

- The default acreage and square footage for each of the Project area's land use types were adjusted to reflect the actual Project area as currently developed.
- The default trip generation rates for the existing land use types were replaced with trip generation rates contained in the TIS prepared for the Project (Linscott, Law, and Greenspan 2019).

The Project area's existing emissions of criteria air pollutants are summarized in Table 2-5 below.

Table 2-5 Existing Emissions in the Project Area

Emissions Source	Maximum Daily Pollutant Emissions (Pounds Per Day) (A)							
	ROG	NO_x	CO	SO_2	PM_{10}		$PM_{2.5}$	
					Dust	Exhaust	Dust	Exhaust
Area	3.3	0.2	4.7	0.01	--	0.6	--	0.6
Energy	0.03	0.3	0.2	0.00(C)	--	0.02	--	0.02
Mobile	0.8	3.8	11.2	0.03	2.6	0.04	0.7	0.03
Total(B)	4.1	4.2	16.1	0.05	2.6	0.7	0.7	0.7

Source: MIG 2019, see Appendix A.

(A) Emissions estimated using CalEEMod, V 2016.3.2. Estimates are based on default model assumptions unless otherwise noted. Maximum daily ROG, CO, and SO_2 emissions occur during the summer. Maximum daily NO_X, PM_{10}, and $PM_{2.5}$ emissions occur during the winter.

(B) Totals may not equal due to rounding.

(C) "<0.00" does not indicate the emissions are less than or equal to 0; rather, it indicates the emission is smaller than 0.01 but larger than 0.000.

2.2.2 Sensitive Air Quality Receptors and Existing Regional Health Risks

The SCAQMD identifies sensitive receptors as populations more susceptible to the effects of air pollution than the general population. Some people are more affected by air pollution than others. Sensitive air quality receptors include specific subsets of the general population that are susceptible to poor air quality and the potential adverse health effects associated with poor air quality. Both CARB and the

SCAQMD consider residences, schools, parks and playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes to be sensitive air quality land uses and receptors (SCAQMD 2017a; CARB 2005). The potential sensitive air quality receptors adjacent or in close proximity to the perimeter of the Project area (i.e., within 1,000 feet) include:

- The single-family residence at 230 West Evergreen Avenue (surrounded by the Project area);
- The multi-family residential development at 228 West Pomona Avenue (MODA at Monrovia Station, 60 feet south of the Project area)
- The multi-family residential development at 313 Genoa Street (350 feet southwest of the Project area, across the Metro Gold Line right-of row (ROW)).

The existing sensitive air quality receptors located adjacent or in close proximity to the Project area, as well as the existing and proposed residents within the Project area, are exposed to air pollution associated with motor vehicles travelling on the I-210, which lies adjacent to the Project area.

According to the SCAQMD's MATES IV Carcinogenic Risk Map, the existing carcinogenic risk on either side of the I-210 in the vicinity of the Project (south and north of I-210) is 1,456 and 1,142, respectively (i.e., there is a probability of 1,456 and 1,142 cases of cancer out of a population of one million) (SCAQMD 2018d). These cancer risks are orders of magnitude higher than the SCAQMD's significance threshold of 10 cases in one million for cancer risk. These estimates, however, are based upon regional modeling efforts that largely do not account for site specific emission rates and dispersion characteristics that typically result in refined and substantially lower health risk estimates.

According to the Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen 3.0 Map, the proposed Project Area is in census tract 6037430902 and has an average pollution indicator percentile of 60% to 65% based on the CalEnviroScreen indicators (e.g., exposure, environmental effects, population characteristics, socioeconomic factors) (OEHHA 2018). These numbers also indicate relatively high health risks in the Project area, likely attributable to the proximity to the I-210. CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. The tool uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. The scores are then mapped so that different communities can be compared.

The CalEnviroScreen data indicates approximately 28 people per 10,000 people in the Project area's census tract visited an emergency facility for asthma-related health issues. This rate places the Project area's census tract in the 20th percentile, meaning the asthma rate in this census tract is higher than 20% of the census tracts in the State (OEHHA 2018). This factor indicates that adverse respiratory health is not prevalent in the census tract in which the proposed Project area is located, and that the existing conditions in the census tract are such that sensitive receptors are in an area of lower risk for adverse respiratory health effects compared to other areas in the state.

2.3 FEDERAL, STATE, AND LOCAL AIR QUALITY REGULATIONS

2.3.1 Federal Air Quality Regulations

Clean Air Act

The Federal Clean Air Act (CAA) defines the U.S. EPA's responsibilities for protecting and improving the United States air quality and ozone layer. Key components of the CAA include reducing

ambient concentrations of air pollutants that cause health and aesthetic problems, reducing emission of toxic air pollutants, and stopping production and use of chemicals that destroy the ozone.

Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, Carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop State Implementation Plans (SIPs); comprehensive documents that identify how an area will attain NAAQS. Deadlines for attainment were established in the 1990 amendments to the CAA based on the severity of an area's air pollution problem. Failure to meet air quality deadlines can result in sanctions against the State or the EPA taking over enforcement of the CAA in the affected area. SIPs are a compilation of new and previously submitted plans, programs, district rules, and State and Federal regulations. The SCAQMD implements the required provisions of an applicable SIP through its Air Quality Management Plan (AQMP). Currently, SCAQMD implements the 2012 Lead SIP for the Los Angeles County portion of Basin through the 2012 AQMP, and the 8-hr Ozone, 1-hr Ozone, 24-hr $PM_{2.5}$, and annual $PM_{2.5}$ SIPs through the 2016 AQMP.

2.3.2 State Air Quality Regulations

California Clean Air Act

In addition to being subject to Federal requirements, air quality in the State is also governed by more stringent regulations under the California Clean Air Act, which was enacted in 1988 to develop plans and strategies for attaining the California Ambient Air Quality Standards. CARB, which is part of the California Environmental Protection Agency (Cal-EPA), develops Statewide air quality regulations, including industry-specific limits on criteria, toxic, and nuisance pollutants. The California Clean Air Act is more stringent than Federal Law in a number of ways, including revised standards for PM_{10} and ozone and for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

In California, both the Federal and State Clean Air acts are administered by CARB. It sets all air quality standards including emission standards for vehicles, fuels, and consumer goods as well as monitors air quality and sets control measures for toxic air contaminants. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional level.

In-Use Off-Road Diesel Equipment Program

CARB's In-Use Off-Road Diesel Equipment regulation is intended to reduce emissions of NO_x and PM from off-road diesel vehicles, including construction equipment, operating within California. The regulation imposes limits on idling; requires reporting equipment and engine information and labeling all vehicles reported; restricts adding older vehicles to fleets; and requires fleets to reduce their emissions by retiring, replacing, or repowering older engines or installing exhaust retrofits for PM. The requirements and compliance dates of the off-road regulation vary by fleet size, and large fleets (fleets with more than 5,000 horsepower) must meet average targets or comply with Best Available Control Technology (BACT) requirements beginning in 2014. CARB has off-road anti-idling regulations affecting self-propelled diesel-fueled vehicles of 25 horsepower and up. The off-road anti-idling regulations limit idling on applicable equipment to no more than five minutes, unless exempted due to safety, operation, or maintenance requirements.

On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

CARB's On-Road Heavy-Duty Diesel Vehicles (In-Use) regulation (also known as the Truck and Bus Regulation) is intended to reduce emission of NO_X, PM, and other criteria pollutants generated from existing on-road diesel vehicles operating in California. The regulation applies to nearly all diesel-fueled

trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds that are privately or federally owned, and for privately and publicly owned school buses. Heavier trucks and buses with a GVWR greater than 26,000 pounds must comply with a schedule by engine model year or owners can report to show compliance with more flexible options. Fleets complying with the heavier trucks and buses schedule must install the best available PM filter on 1996 model year and newer engines, and replace the vehicle 8 years later. Trucks with 1995 model year and older engines had to be replaced starting in 2015. Replacements with a 2010 model year or newer engine meet the final requirements, but owners can also replace the equipment with used trucks that have a future compliance date (as specified in regulation). By 2023, all trucks and buses must have at least 2010 model year engines with few exceptions.

CARB Stationary Diesel Engines – Emission Regulations

In 1998, CARB identified DPM as a TAC. To reduce public exposure to DPM, in 2000, the Board approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Risk Reduction Plan) (CARB 2000). Integral to this plan is the implementation of control measures to reduce DPM such as the control measures for stationary diesel-fueled engines. As such, diesel generators must comply with regulations under CARB's amendments *to Airborne Toxic Control Measure for Stationary Compression Ignition Engines* and be permitted by SCAQMD.

CARB Air Quality and Land Use Handbook

In 1998, CARB identified particulate matter from diesel-fueled engines as a TAC. CARB's Air Quality and Land Use Handbook is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process (CARB 2005). The CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for "sensitive" land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds. Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Project Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day;
- Within 300 feet of gasoline fueling stations; or
- Within 300 feet of dry cleaning operations (dry cleaning with TACs is being phased out and will be prohibited in 2023). The SCAQMD (Regulation 14, Rule 21) has established emission controls for the use of perchloroethylene, the most common dry-cleaning solvent.

Air Toxics "Hot Spots" Program

- State requirements specifically address air toxic issues through Assembly Bill (AB) 1807 (known as the Tanner Bill) that established the State air toxics program and the Air Toxics Hot Spots Information and Assessment Act (AB 2588). The air quality regulations developed from these bills have been modified recently to incorporate the Federal regulations associated with the Federal Clean Air Act Amendments of 1990. The Air Toxics Hot Spots Information and Assessment Act (Hot Spots Act) was enacted in September 1987. Under this Bill, stationary sources of emissions are required to report the types and quantities of certain substances that their facilities routinely release into the air.

California Building Industry Association vs. Bay Area Air Quality Management District

The California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) ruled that CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." The opinion also holds that when a project has "potentially significant exacerbating effects on existing environmental hazards" those impacts are properly within the scope of CEQA because they can be viewed as impacts of the project on "existing conditions" rather than impacts of the environment on the project. The Supreme Court provided the example of a project that threatens to disperse existing buried environmental contaminants that would otherwise remain undisturbed. The Court concluded that it is proper under CEQA to undertake an analysis of the dispersal of existing contaminants because such an analysis would be focused on how the project "would worsen existing conditions." The court also found that the limited number of express CEQA provisions that require analysis of the impacts of the existing environment on a project – such as impacts associated with school siting and airports – should be viewed as specific statutory exceptions to the general rule that such impacts are not properly within CEQA's scope.

2.3.3 Regional Air Quality Regulations

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is a Joint Powers Authority under California State Law, established as an association of Local Governments and agencies that voluntarily convene as a forum to address regional issues. SCAG encompasses the counties of Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial.

SCAG is designated as a Metropolitan Planning Organization (MPO) and as a Regional Transportation Planning Agency. Under SB 375, SCAG, as a designated MPO, is required to prepare a Sustainable Communities Strategy (SCS) as an integral part of its Regional Transportation Plan (RTP). On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. Information contained in Chapter 5: The Road to Greater Mobility and Sustainable Growth of the 2016 RTP/SCS forms the basis for the land use and transportation components of the Air Quality Management Plan (AQMP), and are utilized in the preparation of air quality forecasts and consistency analysis included in the AQMP.

SCAQMD 2016 Air Quality Management Plan

The purpose of an AQMP is to bring an air basin into compliance with federal and state air quality standards and is a multi-tiered document that builds on previously adopted AQMPs. The 2016 AQMP for the Basin, which updated the 2012 AQMP, was approved by the SCAQMD Board of Directors on March 3, 2017. The 2016 AQMP provides new and revised demonstration's for how the SCAQMD, in coordination with Federal, State, Regional and Local Governments will bring the Basin back into attainment for the following NAAQS: 2008 8-hour Ozone; 2012 Annual PM2.5; 2006 24-hour PM2.5[1]; 1997 8-hour Ozone; and 1997 1-hour Ozone.

[1] Although the 2006 24-hour $PM_{2.5}$ standard was focused on in the 2012 AQMP, it has since been determined, primarily due to unexpected drought conditions, that it is impractical to meet the standard by the original attainment year. Since adoption of the 2012 AQMP, the US EPA approved a re-classification to "serious" non-attainment for the standard, which requires a new attainment demonstration and deadline.

To achieve the reductions necessary to bring ambient air quality back into attainment the SCAQMD has identified seven primary objectives for the AQMP, which include:

1. Eliminating reliance on unknown future technology measures to demonstrate future attainment of air quality standards;
2. Calculating and accounting for co-benefits associated with measures identified in other, approved planning efforts (e.g., SCAG's RTP/SCS);
3. Developing a strategy with fair-share emission reductions at the Federal, State, and local levels;
4. Investing in strategies and technologies that meet multiple objectives regarding air quality, climate change, air toxic exposure, energy, and transportation – especially in disadvantaged communities;
5. Seeking, identifying, and securing significant sources of funding for incentives to implement early deployment and commercialization of zero and near-zero technologies, particularly in the mobile source sector;
6. Enhancing the socioeconomic analysis and selecting the most efficient and cost-effective path to achieve multi-pollutant and deadline targets; and
7. Prioritize non-regulatory, innovative approaches that can contribute to the economic vitality of the regional while maximizing emission reductions.

The emission forecasts and demonstrations presented in the 2016 AMQP rely heavily on information contained in other planning and strategy documents. For example, the 2016 AQMP's long-term emissions inventory is based on the growth and land use(s) projections contained in the SCAG's 2016 RTP/SCS. Additionally, the conclusions relating to ozone compliance are based on implementation of measures presented in CARB's Mobile Source Strategy and SIP strategy. The Mobile Source Strategy outlines a suite of measures targeted at on-road light- and heavy-duty vehicles, off-road equipment, and Federal and international sources. A subset of the Statewide strategy is a mobile source strategy for the South Coast SIP. Because the SCAQMD has limited authority in regulating mobile source emissions, coordination and cooperation between SCAQMD, CARB, and the U.S. EPA is imperative to meeting the NOx reductions required to meet ozone standards. Although not incorporated specifically from another planning document strategy, the 2016 AQMP also provides numerous control measures for stationary sources.

SCAQMD Rule Book

In order to control air pollution in the Basin, the SCAQMD adopts rules that establish permissible air pollutant emissions and governs a variety of businesses, processes, operations, and products to implement the AQMP and the various federal and state air quality requirements. SCAQMD does not adopt rules for mobile sources; those are established by CARB or the U.S. EPA. In general, the SCAQMD rules that are anticipated to be applicable to the development of the proposed Project, include:

- **Rule 401 (Visible Emissions)** prohibits discharge into the atmosphere from any single source of emission for any contaminant for a period or periods aggregating more than three minutes in any one hour that is as dark or darker in shade than that designated as No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.
- **Rule 402 (Nuisance)** prohibits discharges of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

- **Rule 403 (Fugitive Dust)** prohibits emissions of fugitive dust from any grading activity, storage pile, or other disturbed surface area if it crosses the project property line or if emissions caused by vehicle movement cause substantial impairment of visibility (defined as exceeding 20 percent capacity in the air). Rule 403 requires the implementation of Best Available Control Measures and includes additional provisions for projects disturbing more than five acres and those disturbing more than fifty acres.
- **Rule 445 (Wood Burning Devices)** prohibits installation of woodburning devices such as fireplaces and wood-burning stoves in new development unless the development is located at an elevation above 3,000 feet or if existing infrastructure for natural gas service is not available within 150-feet of the development. All fireplaces installed within the Proposed Project Area will be natural gas fueled fireplaces.
- **Rule 481 (Spray Coating Operations)** imposes equipment and operational restrictions during construction for all spray painting and spray coating operations.
- **Rule 1108 (Cutback Asphalt)** prohibits the sale or use of any cutback asphalt containing more than 0.5 percent by volume organic compounds which evaporate at 260°C (500°F) or lower.
- **Rule 1113 (Architectural Coatings)** establishes maximum concentrations of VOCs in paints and other applications and establishes the thresholds for low-VOC coatings.
- **Rule 1143 (Consumer Paint Thinners and Multi-Purpose Solvents)** prohibits the supply, sale, manufacture, blend, package or repackage of any consumer paint thinner or multi-purpose solvent for use in the SCAQMD unless consumer paint thinners or other multi-purpose solvents comply with applicable VOC content limits.
- **Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities)** specifies work practice requirements to limit asbestos emissions from building demolitions and renovation activities, including the removal and associated disturbance of asbestos containing materials. The requirements for demolition and renovation activities include asbestos surveying, notification, asbestos containing materials removal procedures and time schedules, asbestos containing materials handling and clean-up procedures, and storage, disposal, and land filling requirements for asbestos containing waste materials.

2.3.4 City of Monrovia General Plan

The City of Monrovia's existing General Plan does not establish specific goals, policies, or standards related to air quality; however, the City's Monrovia General Plan Proposed Land Use and Circulation Elements EIR (City of Monrovia 2008) included the following mitigation measures related to air quality:

- **AIR-A:** The City shall require applicants to analyze the air quality impacts of construction for each project.
- **AIR-B:** If project-level analysis demonstrates that NOx emissions would be significant, the project shall provide a plan, for approval by the City, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, shall utilize all feasible measures to reduce the emissions to a less than significant level. Acceptable options for reducing emissions may include use of late model low-emission diesel engines, alternative fuels, engine retrofit technology, and/or other

options as they become available. The SCAQMD web site provides specific information on mitigation options for off-road and on-road construction equipment.

- **AIR-C:** The following measure shall be incorporated into all project specifications to reduce diesel engine emissions of O_3 precursors including ROG and NO_X, PM_{10}, $PM_{2.5}$, and diesel PM:

  Idling Restrictions. Idling of diesel-powered vehicles and equipment shall not be permitted during periods of non-active vehicle use. Diesel-powered engines shall not be allowed to idle for more than 5 consecutive minutes in a 60-minute period when the equipment is not in use, occupied by an operator, or otherwise in motion, except as follows:

  - When equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;
  - When it is necessary to operate auxiliary systems installed on the equipment, only when such system operation is necessary to accomplish the intended use of the equipment;
  - To bring the equipment to the manufacturer's recommended operating temperature;
  - When the ambient temperature is below 40 degrees F or above 85 degrees F; or
  - When equipment is being repaired.
- **AIR–D:** The City shall require that all new residential fireplaces to be fueled by natural gas. Wood stoves and wood burning fireplaces shall be prohibited.
- **AIR-E:** The City shall require applicants to analyze the potential for creating a local CO hotspot due to traffic congestion that could result from implementation of projects anticipated in the proposed General Plan amendments to the Land Use and Circulation Element.
- **AIR-F:** The City shall require applicants to complete a Health Risk Assessment (HRA) to determine the cancer risk to sensitive receptors for all residential projects located within 500 feet of Interstate 210 (I-210).
- **AIR-G:** The City shall require applicants to assess the potential impacts to children's respiratory health for all residential projects located within 500 feet of I-210.

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3 GREENHOUSE GAS SETTING AND REGULATORY FRAMEWORK

This chapter provides information on the environmental and regulatory GHG setting of the proposed Project. Information on existing GHG conditions, relevant standards, and issues of concern was obtained from the U.S. EPA, CARB, and SCAQMD.

3.1 DEFINING CLIMATE CHANGE

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e. changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affects the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term "climate change" is preferred over the term "global warming" because "climate change" conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface.

Elements that indicate that climate change is occurring on Earth include, but are not limited to:

- Rising of global surface temperatures by 1.3°F over the last 100 years;
- Changes in precipitation patterns;
- Melting ice in the Arctic;
- Melting glaciers throughout the world;
- Rising ocean temperatures;
- Acidification of oceans; and
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet. The majority of radiation from the Sun hits the Earth's surface and warms it. The Earth's surface in turn radiates heat back towards the atmosphere, known as infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping back into space and re-radiate it in all directions. This process is essential to supporting life on Earth because it keeps the planet warmer during the nights than without it. Emissions from human activities since the beginning of the industrial revolution (approximately 150 years ago) are adding to the natural greenhouse effect by increasing the gases in the atmosphere that trap heat, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

3.1.1 Greenhouse Gases

Gases that trap heat in the atmosphere and affect regulation of the earth's temperature are known as a greenhouse" gas, or GHG(s). Many chemical compounds found in the earth's atmosphere exhibit the GHG property. GHGs allow sunlight to enter the atmosphere freely. When sunlight strikes the earth's surface, it is either absorbed or reflected back toward space. Earth that has absorbed sunlight warms up and emits infrared radiation toward space. GHGs absorb this infrared radiation and "trap" the energy in the earth's atmosphere.

GHGs that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants because climate regulation is global in scale, both in terms of causes and effects. Some GHGs are emitted to the atmosphere naturally by biological and geological processes such as evaporation (water vapor), aerobic respiration (carbon dioxide), and off-gassing from low oxygen environments such as swamps or exposed permafrost (methane); however, GHG emissions from human activities such as fuel combustion (e.g., carbon dioxide) and refrigerants use (e.g., hydrofluorocarbons) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (approximately pre-1880) and atmospheric carbon dioxide concentrations have increased from a pre-industrial value of 280 parts per million (ppm) in the early 1800's to 406 ppm in October 2018 (NOAA, 2018).

The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHGs – carbon dioxide, methane, nitrous oxide, and sulfur hexafluoride – and two groups of gases – hydrofluorocarbons and perfluorocarbons. These GHG are the primary GHG emitted into the atmosphere by human activities. Water vapor is also a common GHG that regulates the earth's temperature; however, the amount of water vapor in the atmosphere can change substantially from day to day, whereas other GHG emissions remain in the atmosphere for longer periods of time. Black carbon consists of particles emitted during combustion; although a particle and not a gas, black carbon also acts to trap heat in the Earth's atmosphere. The six common GHGs are described below.

- **Carbon Dioxide (CO_2)**. CO_2 is released to the atmosphere when fossil fuels (oil, gasoline, diesel, natural gas, and coal), solid waste, and wood or wood products are burned.
- **Methane (CH_4)**. CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic waste in municipal solid waste landfills and the raising of livestock.
- **Nitrous Oxide (N_2O)**. N_2O is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.
- **Sulfur Hexafluoride (SF_6)**. SF_6 is commonly used as an electrical insulator in high voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF_6 occur during maintenance and servicing as well as from leaks of electrical equipment.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs)**. HFCs and PFCs are generated in a variety of industrial processes. Although the amount of these gases emitted into the atmosphere is small in terms of their absolute mass, they are potent agents of climate change due to their high global warming potential.

GHGs can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO_2, which has a GWP of one. By comparison, CH_4 has a GWP of 25, which means that one molecule of CH_4 has 25 times the effect on global warming as one molecule of CO_2. Multiplying the estimated emissions for non-CO_2 GHGs by their GWP determines their carbon dioxide equivalent (CO2e), which enables a project's combined global warming potential to be expressed in terms of mass CO_2 emissions. The GWPs and estimated atmospheric lifetimes of the common GHG are shown in Table 3-1.

Table 3-1: Global Warming Potential (GWP) of Common Greenhouse Gases (GHG)		
GHG	**Lifetime (years)**	**GWP(A)**
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC-14	50,000	7,390
PFC-116	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800
Source: CARB, 2014. (A) GWPs are based on the United Nations Intergovernmental Panel on Climate Change (IPCC) 4th Assessment Report.		

3.1.2 Climate Change and California

The 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency (CNRA) identified anticipated impacts to California due to climate change through extensive modeling efforts. General climate changes in California indicate that:

- California is likely to get hotter and drier as climate change occurs with a reduction in winter snow, particularly in the Sierra Nevada Mountain Range.
- Some reduction in precipitation is likely by the middle of the century.
- Sea levels will rise up to an estimated 55 inches.
- Extreme events such as heat waves, wildfires, droughts, and floods will increase.
- Ecological shifts of habitat and animals are already occurring and will continue to occur (CNRA 2009).

In July 2012, the CNRA and Emergency management Agency published an update, titled Emergency Management Agency published California Adaptation Planning Guide, which walks local decision-makers through the steps to create climate vulnerability assessments and adaptation strategies. This guide presents the basis for climate change adaptation planning and introduces a step-by-step process for local and regional climate vulnerability assessment and adaptation strategy development. The guide outlines nine steps in adaptation planning development, the first five steps are a vulnerability assessment which covers: 1) exposure, 2) sensitivity, 3) potential impacts, 4) adaptive capacity, and 5) risk and onset. The last four steps are guiding principles for adaptation strategy development, which are: 6) prioritize adaptive needs, 7) identify strategies, 8) evaluate and prioritize, and 9) phase and implement.

The potential impacts of global climate change in California are detailed below.

Public Health and Welfare

Concerns related to public health and climate change includes higher rates of mortality and morbidity, change in prevalence and spread of disease vectors, decreases in food quality and security,

reduced water availability, and increased exposure to pesticides. These concerns are all generally related to increase in ambient outdoor air temperature, particularly in summer.

Higher rates of mortality and morbidity could arise from more frequent heat waves at greater intensities. Health impacts associated with extreme heat events include heat stroke, heat exhaustion, and exacerbation of medical conditions such as cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. Climate change would result in degradation of air quality promoting the formation of ground-level pollutants, particularly ozone. Degradation of air quality would increase the severity of health impacts from criteria and other air pollutants discussed in Section 2.1.1 (Regulated Air Pollutants). Temperature increases and increases in carbon dioxide are also expected to increase plant production of pollens, spores, and fungus. Pollens and spores could induce or aggravate allergic rhinitis, asthma, and obstructive pulmonary diseases.

Precipitation projections suggest that California will become drier over the next century due to reduced precipitation and increased evaporation from higher temperatures. These conditions could result in increased occurrences of drought. Surface water reductions will increase the need to pump groundwater, reducing supplies and increasing the potential for land subsidence.

Precipitation changes are also suspected to impact the Sierra snowpack (see "Water Management" herein). Earlier snowmelts could coincide with the rainy season and could result in failure of the flood control devices in that region. Flooding can cause property damage and loss of life for those affected. Increased wildfires are also of concern as the State "dries" over time. Wildfires can also cause property damage, loss of life, and injuries to citizens and emergency response services.

Sea-level rises would also threaten human health and welfare. Flood risks will be increased in coastal areas due to strengthened storm surges and greater tidal damage that could result in injury and loss of property and life. Gradual rising of the sea will permanently inundate many coastal areas in the state.

Other concerns related to public health are changes in the range, incidence, and spread of infectious, water-borne, and food-borne diseases. Changes in humidity levels, distribution of surface water, and precipitation changes are all likely to shift or increase the preferred range of disease vectors (i.e. mosquitoes). This could expose more people and animals to potential for vector-borne disease.

Biodiversity and Habitat

Changes in temperature will change the livable ranges of plants and animals throughout the state and cause considerable stress on these species. Species will shift their range if appropriate habitat is available and accessible if they cannot adapt to their new climate. If they do not adapt or shift, they face local extirpation or extinction. As the climate changes, community compositions and interactions will be interrupted and changed. These have substantial implications on the ecosystems in the state. Extreme events will lead to tremendous stress and displacement on affected species. This could make it easier for invasive species to enter new areas, due to their ability to more easily adapt. Precipitation changes would alter stream flow patterns and affect fish populations during their life cycle. Sea level rises could impact fragile wetland and other coastal habitat.

Water Management

Although disagreement among scientists on long-term precipitation patterns in the State has occurred, it is generally accepted by scientists that rising temperatures will impact California's water supply due to changes in the Sierra Nevada snowpack. Currently, the State's water infrastructure is designed to both gather and convey water from melting snow and to serve as a flood control device. Snowpack melts

gradually through spring warming into early summer, releasing an average of approximately 15 million acre-feet of water. The State's concern related to climate change is that due to rising temperatures, snowpack melt will begin earlier in the spring and will coincide with the rainy season. The combination of precipitation and snowmelt would overwhelm the current system, requiring tradeoffs between water storage and flood protection to be made. Reduction in reserves from the Sierra Nevada snowpack is troublesome for California and particularly for Southern California. Approximately 75-percent of California's available water supply originates in the northern third of the state while 80 percent of demand occurs in the southern two-thirds. There is also concern is that rising temperatures will result in decreasing volumes from the Colorado River basin. Colorado River water is important to Southern California because it supplies water directly to Metropolitan Water District of Southern California. Water from the Colorado River is also used to recharge groundwater basins in the Coachella Valley.

Agriculture

California is the most agriculturally productive state in the US resulting in more than 37 billion dollars in revenue in 2008. California is the nation's leading producer of nearly 80 crops and livestock commodities, supplying more than half of the nation's fruit and vegetables and over 90 percent of the nation's production of almonds, apricots, raisin grapes, olives, pistachios, and walnuts. Production of crops is not limited to the Central Valley but also occurs in Southern California. Strawberries and grapes are grown in San Bernardino and Riverside Counties. Orange County and San Diego County also contribute to strawberry production. Cherries are also grown in Los Angeles and Riverside County. Anticipated impacts to agricultural resources are mixed when compared to the potentially increased temperatures, reduced chill hours, and changes in precipitation associated with climate change. For example, wheat, cotton, maize, sunflower, and rice are anticipated to show declining yields as temperatures rise. Conversely, grapes and almonds would benefit from warming temperatures. Anticipated increases in the number and severity in heat waves would have a negative impact on livestock where heat stress would make livestock more vulnerable to disease, infection and mortality. The projected drying trend and changes in precipitation are a threat to agricultural production in California. Reduced water reliability and changes in weather patterns would impact irrigated farmlands and reduce food security. Furthermore, a drying trend would increase wildfire risk. Overall, agriculture in California is anticipated to suffer due to climate change impacts.

Forestry

Increases in wildfires will substantially impact California's forest resources that are prime targets for wildfires. This can increase public safety risks, property damage, emergency response costs, watershed quality, and habitat fragmentation. Climate change is also predicted to affect the behavior or plant species including seed production, seedling establishment, growth, and vigor due to rising temperatures. Precipitation changes will affect forests due to longer dry periods and moisture deficits and drought conditions that limit seedling and sapling growth. Prolonged drought also weakens trees, making them more susceptible to disease and pest invasion. Furthermore, as trees die due to disease and pest invasion (e.g., the Bark Beetle invasion of the San Bernardino Forest), wildfires can spread more rapidly.

Transportation and Energy Infrastructure

Higher temperatures will require increased cooling, raising energy production demand. Higher temperatures also decrease the efficiency of distributing electricity and could lead to more power outages during peak demand. Climate changes would impact the effectiveness of California's transportation infrastructure as extreme weather events damage, destroy, and impair roadways and railways throughout the state causing governmental costs to increase as well as impacts to human life as accidents increase. Other infrastructure costs and potential impacts to life would increase due to the need to upgrade levees

and other flood control devices throughout the state. Infrastructure improvement costs related to climate change adaptation are estimated in the tens of billions of dollars.

3.1.3 Carbon Sequestration

Carbon sequestration is the process by which plants absorb CO_2 from the atmosphere and store it in biomass like leaves and grasses. Agricultural lands, forests, and grasslands can all sequester carbon dioxide, or emit it. The key is to determine if the land use is emitting carbon dioxide faster than it is absorbing it. Young, fast-growing trees are particularly good at absorbing more than they release and are known as a sink. Agricultural resources often end up being sources of carbon release because of soil management practices. Deforestation contributes to carbon dioxide emissions by removing trees, or carbon sinks, that would otherwise absorb CO_2. Forests are a crucial part of sequestration in some parts of the world, but not much in the United States. Another form of sequestration is geologic sequestration. This is a manmade process that results in the collection and transport of CO_2 from industrial emitters (i.e. power plants) and injecting it into underground reservoirs.

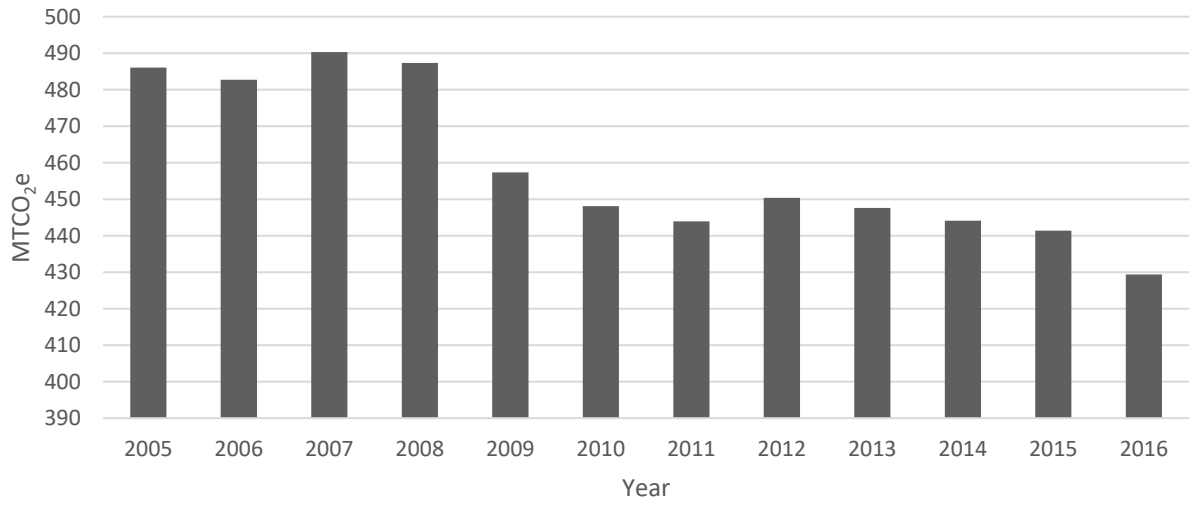
3.2 EXISTING GHG EMISSIONS LEVELS

3.2.1 State GHG Emissions Levels

CARB prepares an annual statewide GHG emissions inventory using regional, state, and federal data sources, including facility-specific emissions reports prepared pursuant to the state's Mandatory GHG Reporting Program (see Section 3.4.2). The statewide GHG emissions inventory helps CARB track progress towards meeting the state's AB 32 GHG emissions target of 431 million metric tons of CO_2 equivalents (MTCO2e), as well as establish and understand trends in GHG emissions. CARB approved use of 431 MMCO2e as the state's 2020 GHG emission target in May 2014. Previously, the target had been set at 427 MMCO2e. Statewide GHG emissions for the 2006 to 2016 time period are shown in Table 3-2. Statewide GHG emissions have generally decreased over the last decade, with 2016 levels (429 million MTCO2e) approximately 12 percent less than 2005 levels (486 million MTCO2e). The transportation sector (169 million MTCO2e) accounted for more than one-third (approximately 39.4%) of the state's total GHG emissions inventory (429 million MTCO2e) in 2016.

Table 3-2: 2005 – 2016 Statewide GHG Emissions (Million $MTCO_2e$)

Scoping Plan Sector	Year											
	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16
Agriculture	34	35	36	36	33	34	35	36	35	36	34	34
Commercial/Residential	42	43	43	44	44	45	46	43	44	37	38	39
Electric Power	108	105	114	120	101	90	88	95	90	88	84	69
High GWP	9	10	11	12	12	14	15	16	17	18	19	20
Industrial	96	93	90	91	88	91	91	91	94	94	92	90
Recycling and Waste	8	8	8	8	8	8	8	8	9	9	9	9
Transportation	189	189	189	178	170	165	162	161	161	162	166	169
Total Million $MTCO_2e$(A)	***486***	***483***	***490***	***487***	***457***	***448***	***444***	***450***	***448***	***444***	***441***	***429***



Source: CARB, 2018

(A) Totals may not equal due to rounding. CARB inventory uses GWPs based on the United Nations' ICC's 4th Assessment Report.

3.2.2 Existing Project Area GHG Emissions

As explained in Section 2.2.1, the proposed Project area consists of eight single-family residences and light industrial uses that generate emissions, including GHG emissions, which contribute to existing environmental conditions. In addition to the mobile, energy, and area sources described in Section 2.2.1, the existing land uses generate emissions from the following additional sources specific to GHG emissions. Existing GHG emissions were modeled using CalEEMod, V. 2016.3.2, using default data assumptions.

GHG emissions generated within the Project area primarily come from the area, energy, and mobile sources described in Section 2.1., Air Quality, as well as the following additional sources specific to GHG emissions:

- **Energy use and consumption:** Emissions generated from purchased electricity and natural gas. As estimated using CalEEMod, the existing land uses in the project area use and consume approximately 504,116 kWh of electricity per year and 934,747 kBtus of natural gas per year.
- **Solid waste disposal:** Emissions generated from the transport and disposal of waste generated by land uses. CalEEMod estimates approximately 67.6 tons of solid waste are generated per year by the people working and living within the Project area
- **Water/wastewater:** Emissions from electricity used to supply water to land uses, and treat the resulting wastewater generated. As estimated in CalEEMod, existing land uses within the Project area use approximately 11.4 million gallons of water per year.

The Project area's existing GHG emissions were estimated using default emissions assumptions provided by CalEEMod, with the Project-specific modifications described in Section 7.1.1 and below:

- **Mobile Sources.** As described in Section 7.1.1, the default trip generation rates for the proposed land use types were replaced with trip generation rates contained in the TIS prepared for the Project (Linscott, Law, and Greenspan 2019). According to the TIS, the existing land uses generate approximately 295 trips per weekday. CalEEMod does not estimate N_2O emissions from on-road vehicle travel or off-road construction sources. To account for this, CalEEMod emissions estimates were adjusted as follows:
    - N_2O emissions were estimated for the Project by comparing the ratio of CO_2 and N_2O emissions for the on-road (light-duty vehicles) and off-road transportation sectors contained in the State's most recent GHG inventory (CARB 2018b, 2018c). In 2016, statewide CO_2 and N_2O emissions estimates for the on-road transportation sector (light-duty gasoline vehicles) were 115.4 and 0.005 million metric tons, respectively (N_2O emissions are therefore equal to 0.004% of CO_2 emissions for this sector). In 2016, the off-road transportation sector emitted 2.29 million metric tons of CO_2 and 0.0002 million metric tons of N_2O (N_2O emissions are therefore equal to 0.001% of CO_2 emissions for this sector).
- **Energy use and consumption:** In addition to natural gas usage, the existing land uses in the Project area would generate indirect GHG emissions from electricity use. Southern California Edison provides electricy service in the City of Monrovia. The CalEEMod default GHG intensity values for this electric service provider are from 2012 and do not represent existing and future reductions in GHG intensity that have been achieved under the State's Renewable Portfolio Standard (see Section 2.3.2). To account for this, CalEEMod default assumptions regarding energy use were adjusted as follows:
    - The SCE GHG intensity value was reduced based on an increase in renewable energy mix from 20% under estimated Year 2012 conditions to 33% under existing conditions (2016, the last year of data available from SCE). This adjustment reduced the estimated amount of CO_2 produced by the SCE energy mix from approximately 702 pounds/megawatt-hour (mWh) to 526 pounds/mWh.

The Project area's existing GHG emissions are summarized in Table 3-3 below.

Table 3-3 Existing GHG Emissions in the Project Area

Source	GHG Emissions (Metric Tons / Year)			
	CO_2	CH_4	N_2O	Total $MTCO_2e$
Area	2.6	<0.00(A)	<0.00(A)	2.7
Energy(B)	190.1	<0.00(A)	<0.00(A)	190.9
Mobile(C)	455.6	0.02	0.00	456.3
Waste	13.0	0.8	<0.00(A)	32.1
Water	38.4	0.4	<0.00(A)	49.8
Totall(D)	699.7	1.2	0.01	731.8

Source: MIG 2019 (see Appendix A)
Notes:
(A) "<0.0" does not indicate the emissions are less than or equal to 0; rather, it indicates the emission is smaller than 0.01, but larger than 0.000.
(B) The emissions estimated in CalEEMod account for the carbon intensity metrics provided in Southern California Edison's 2016 Corporate Responsibility and Sustainability Report (SCE 2016) and U.S. Environmental Protection Agency's eGrid2014v2 emission rates (USEPA 2017).
(C) Totals may not equal due to rounding.

3.3 STATE AND REGIONAL ENERGY SETTING

Energy use can affect air quality and other natural resources adversely. Energy is primarily categorized in three areas: electricity, natural gas, and fuels used for transportation. According to the U.S. Energy Information Administration (USEIA), California is the most populous state in the U.S., representing 12 percent of the total national population, has the largest economy, and is second only to Texas in total energy consumption. However, California has one of the lowest per capita energy consumption levels in the U.S. This is a result of California's mild climate, extensive efforts to increase energy efficiency, and implementation of alternative technologies. California leads the nation in electricity generation from solar, geothermal, and biomass resources (USEIA, 2018).

Total annual energy consumption in the U.S. as of October 2018 was approximately 83.7 quadrillion British thermal units (Btu) (EIA 2019). Fossil fuels provided approximately 79% of this energy, consisting of petroleum (approximately 30 %), natural gas (approximately 33%), and coal (approximately 16%) resources. Total renewable sources accounted for approximately 12% of energy consumption, and nuclear electric power accounted for approximately 9% of the energy consumed in the U.S. In 2016, California was ranked the forth lowest state in terms of energy use on a per capita basis (199 million Btu per person).

3.3.1 Electricity

Almost half of California's net electricity generation was from renewable resources, including hydropower, in 2017 (EIA 2019). In 2017 the California electric system used 292,039 Gigawatt hours (GWh) of electricity, of which 206,336 GWh was produced in-state (CEC 2018a). Los Angeles County consumed 67,598 GWh of electricity, about 23 percent of the state's electricity consumption (CEC, 2019a). Southern California Edison (SCE) is the utility provider for the City of Monrovia. In the 2017 fiscal year, SCE sold approximately 85,879 million kilowatt-hours (kWh) of electricity (SCE 2018a); approximately 46% of the electricity that SCE delivered to customers came from carbon-free resources, including solar energy (approximately 13%, wind energy (approximately 10%), and geothermal energy (approximately 8%)(SCE 2018b).

Based on the CalEEMod emissions estimates prepared for the project (see Section 2.2.1), the existing development in the project area is estimated to consume approximately 556,730 kWh of electricity per year. Based on a service population of approximately 48, this works out to approximately 11,599 kWh / service population, annually.[2]

3.3.2 Natural Gas

California accounts for less than one percent of total U.S. natural gas reserves and production; however, almost two-thirds of California households use natural gas for home heating (EIA 2019). In 2017, California consumed about 25,142 million therms of natural gas. Approximately 18% of natural gas was consumed by the residential sector. Los Angeles County consumed approximately 2,956 million therms of natural gas in the same year, accounting for 12% of statewide consumption. The residential sector made up approximately 38% of county wide consumption (CEC 2019b).

The Southern California Gas Company (SoCalGas) provides natural gas service to the City. SoCalGas is the principal distributor of natural gas in Southern California and provides natural gas for residential, commercial, and industrial markets. The annual natural gas sale to all markets in 2017 was approximately 5,142 million Btu (CEC 2019c).

Based on the CalEEMod emissions estimates prepared for the project (see Section 2.2.1), the existing development in the project area is estimated to consume approximately 1,020,541 kBtu per year. Based on a service population of approximately 48, this works out to approximately 21,261 kBtu / service population, annually.

3.3.3 Transportation

California's transportation sector consumed 79.3 million Btu of energy per capita in 2017, which ranked 32nd in the nation (EIA 2017). Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by CARB.

According to the Board of Equalization (BOE), statewide taxable sales figures indicate a total of 15,584 million gallons of gasoline and 3,124 million gallons of diesel fuel were sold in 2017 (CEC, 2019d; CDFTA 2018a and 2018b). Although exact estimates are not available by County, retail fuel outlet survey data indicates Santa Clara County accounted for approximately 23.4% and 9.7% of total statewide gasoline and diesel sales, respectively (CEC, 2018b).

According to CalTrans, the annual vehicle miles traveled within all jurisdiction of Los Angeles County (state highway and local roadway) is 80,773,551 (Caltrans 2017).

The TIA prepared for the proposed project identifies the existing land uses in the project area generate approximately 1,107 net new trips per weekday (Linscott, Law, and Greenspan 2019). This level of trip generation was estimated by CalEEMod to produce 1,006,843 vehicle miles travelled per year (see Appendix A).

[2] Service population is the sum of population and employment in the project area. The existing residential land uses support approximately 22 people (see Section 17.2.3) and the approximately 44,240 square feet of industrial land uses support approximately 26 jobs, based on a rate of one employee per 1,700 square feet of warehouse space in a suburban area (SCAG 2015).

3.4 FEDERAL, STATE, AND LOCAL CLIMATE CHANGE REGULATIONS

3.4.1 Federal GHG Regulations

U.S. EPA GHG Tailoring Rule and GHG Reporting System

On December 7, 2009, the U.S. EPA issued an endangerment finding that current and projected concentrations of the six Kyoto GHGs (CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs) in the atmosphere threaten the public health and welfare of current and future generations. This finding came in response to the Supreme Court ruling in *Massachusetts v. EPA*, which found that GHG are pollutants under the federal Clean Air Act. As a result, the U.S. EPA issued its GHG Tailoring Rule in 2010, which applies to facilities that have the potential to emit more than 100,000 MTCO2e. In 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146), finding that the U.S. EPA may not treat greenhouse gases as an air pollutant for purposes of determining whether a source is a major source required to obtain a permit pursuant to the Clean Air Act's Prevention of Significant Deterioration or Title V operating permit programs. The U.S. EPA's Greenhouse Gas Reporting Program requires facilities that emit 25,000 MTCO2e or more of GHG to report their GHG emissions to the U.S. EPA to inform future policy decisions.

Current Administration

President Trump and the U.S. EPA have stated their intent to halt various federal regulatory activities to reduce GHG emission. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and potential responses from California and other states are speculative at this time.

3.4.2 State Climate Change Regulations

Executive Order S-3-05

Executive Order S-3-05 was issued by California Governor Arnold Schwarzenegger and established targets for the reduction of greenhouse gas emission at the milestone years of 2010, 2020, and 2050. Statewide GHG emissions must be reduced to 1990 levels by year 2020 and by 80 percent beyond that by year 2050. The Order requires the Secretary of the Cal-EPA to coordinate with other State departments to identify strategies and reduction programs to meet the identified targets. A Climate Action Team (CAT) was created and is headed by the Secretary of Cal-EPA who reports on the progress of the reduction strategies. The latest CAT Biennial Report to the Governor and Legislature was completed in April 2016.

Assembly Bill 32 – California Global Warming Solutions Act and Related GHG Reduction Goals

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 establishes the caps on Statewide greenhouse gas emissions proclaimed in Executive Order S-3-05 and established the timeline for meeting State GHG reduction targets. The deadline for meeting the 2020 reduction target is December 31, 2020.

As part of AB 32, CARB determines 1990 GHG emissions levels and projected a "business-as-usual" (BAU)[3] estimate for 2020, to determine the amount of GHG emission reductions that would need to be achieved. In 2007, CARB approved a Statewide 1990 emissions level and corresponding 2020 GHG emissions limit of 427 million $MTCO_2e$ (CARB 2007). In 2008, CARB adopted its Climate Change Scoping Plan, which projects 2020 Statewide GHG emissions levels of 596 million $MTCO_2e$ and identifies numerous measures (i.e., mandatory rules and regulations and voluntary measures) that will achieve at least 174 million $MTCO_2e$ of GHG reductions and bring Statewide GHG emissions to 1990 levels by 2020 (CARB 2009).

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase renewable electricity to 50 percent.
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner.
- Reduce petroleum use in cars and trucks by up to 50 percent.
- Reduce emissions of short-lived climate pollutants.
- Manage farms, rangelands, forests and wetlands to increasingly store carbon.

By directing State agencies to take measures consistent with their existing authority to reduce GHG emissions, Executive Order B-30-15 establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32 and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius.

To reinforce the goals established through Executive Order B-30-15, Governor Brown went on to sign Senate Bill (SB) 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target (to reduce GHG emissions by 40 percent below 1990 levels by 2030) a requirement, as opposed to a goal. AB 197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, "protect the State's most impacted and disadvantaged communities …[and] consider the social costs of the emissions of greenhouse gases."

Scoping Plan

The CARB Scoping Plan is the comprehensive plan primarily directed at identifying the measures necessary to reach the GHG reduction targets stipulated in AB 32. The key elements of the 2008 Plan were to expand and strengthen energy efficiency programs, achieve a Statewide renewable energy mix of 33 percent, develop a cap-and-trade program with other partners (including seven States in the United States and four territories in Canada) in the Western Climate Initiative, establish transportation-related targets, and establish fees (CARB 2009). CARB estimated that implementation of these measures will achieve at least 174 million $MTCO_2e$ of reductions and reduce Statewide GHG emissions to 1990 levels by 2020 (CARB 2009).

On February 10, 2014, CARB released the public draft of the "First Update to the Scoping Plan." "The First Update" built upon the 2008 Scoping Plan with new strategies and recommendations, and identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. "The First Update" defined CARB's

[3] BAU is a term used to define emissions levels without considering reductions from future or existing programs or technologies.

climate change priorities over the next five years, and set the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-12. It also highlighted California's progress toward meeting the 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. "The First Update" evaluated how to align the State's long-term GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. "The First Update" to the Scoping Plan was approved by the Board on May 22, 2014.

The second update to the scoping plan, the 2017 Climate Change Scoping Plan update (CARB 2017c), was adopted by CARB in December 2017. The primary objective for the 2017 Climate Change Scoping Plan is to identify the measures required to achieve the mid-term GHG reduction target for 2030 (i.e., reduce emissions by 40 percent below 1990 levels by 2030) established under Executive Order B-30-15 and SB 32. The *2017* Climate Change Scoping Plan identifies an increased need for coordination among State, Regional, and local governments to realize the potential for GHG emissions reductions that can be gained from local land use decisions. It notes that emissions reductions targets set by more than one hundred local jurisdictions in the State could result in emissions reductions of up to 45 million $MTCO_2e$ and 83 million $MTCO_2e$ by 2020 and 2050, respectively. To achieve these goals, the 2017 Scoping Plan Update includes a recommended plan-level efficiency threshold of six metric tons or less per capita by 2030 and no more than two metric tons by 2050. The major elements of the *2017* Climate Change Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero emission vehicle (ZEV) buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewable Portfolio Standard (RPS) to 50 percent and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing CH4 and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20 percent reduction in GHG emissions from refineries by 2030.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Senate Bill 375 – Sustainable Communities and Climate Protection Act

In January 2009, California SB 375 went into effect known as the Sustainable Communities and Climate Protection Act. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce greenhouse gas emissions and other air pollutants. SB 375 tasks ARB to set greenhouse gas reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare an SCS as part of their RTP. The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In the Southern California Association of Governments (SCAG) region (in which the proposed Project is located), sub-regions can also elect to prepare their own RTP/SCS. In April 2016, the SCAG adopted the 2016 RTP/SCS. The RTP/SCS identifies over 4,000 transportation projects ranging from highway improvements, railroad grade separations, bicycle lanes, new transit hubs, and replacement bridges. These future investments were included in county plans developed by the six county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS would result in an eight percent reduction in GHG emissions by 2020, and 18 percent reduction by 2035, and 31 percent reduction by 2040 – compared with 2005 levels.

In March 2018, CARB established new regional GHG reduction targets for SCAG and other MPOs in the state (CARB, 2018a). The new SCAG targets are an 8% reduction in per capita passenger vehicle GHG reductions by 2020 and an 19% reduction by 2035.

Executive Order B-30-15 / Senate Bill 32 and Assembly Bill 197

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, sets a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. By directing state agencies to take measures consistent with their existing authority to reduce GHG emissions, this order establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32 and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius.

To reinforce the goals established through Executive Order B-30-15, Governor Brown went on to sign SB 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target to reduce GHG emissions by 40 percent below 1990 levels by 2030 a requirement as opposed to a goal. AB-197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, "protect the state's most impacted and disadvantaged communities …[and] consider the social costs of the emissions of greenhouse gases."

Assembly Bill 1493

With the passage of AB 1493 (Pavley I) in 2002, California launched an innovative and pro-active approach for dealing with GHG emissions and climate change at the State level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks from 2009 through 2016. Although litigation was filed challenging these regulations and the U.S. EPA initially denied California's related request for a waiver, a waiver has since been granted (CARB 2017b). In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 among light-duty vehicles. In January 2012, CARB approved the Advanced Clean Cars (ACC) program (formerly known as Pavley II) for model years 2017 through 2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the Zero-Emission Vehicle (ZEV) regulation. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards.

Renewables Portfolio Standard (RPS) Program

In 2002, California established its RPS Program, with the goal of increasing the percentage of renewable energy in the State's electricity mix to 20 percent of retail sales by 2017. The 2003 Integrated Energy Policy Report recommended accelerating that goal to 20 percent by 2010, and the 2004 Energy Report Update further recommended increasing the target to 33 percent by 2020. The State's Energy Action Plan also supported this goal. In 2006 under SB 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one

percent each year with a target of 20 percent renewables by 2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

On November 17, 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring "[a]ll retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." The following year, Executive Order S-21-09 directed the California Air Resources Board, under its AB 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020. In October 2015, Governor Brown signed SB 350 to codify the ambitious climate and clean energy goals of Executive Order S-14-08. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the State's electricity from renewable sources by 2030."

Most recently, on September 10, 2018, Governor Brown signed SB 100 and issued Executive Order B-55-18. SB 100 revised the above-described legislation to mandate a 50 percent renewable energy mix by December 31, 2026, achieve a 60 percent renewable energy target by December 31, 2030, as well as call for 100 percent carbon-free electricity by 2045. Executive Order B-55-18 further strengthens California's commitment to clean energy by calling for statewide carbon-neutrality by 2045.

Water Conservation in Landscaping Act

Section 65591 of the Government Code requires all local jurisdictions to adopt a water efficient landscape ordinance. The ordinance is to address water conservation through appropriate use and grouping of plants based on environmental conditions, water budgeting to maximize irrigation efficiency, storm water retention, and automatic irrigation systems. Failure to adopt a water efficiency ordinance requires a local jurisdiction to enforce the provisions of the State's model water efficiency ordinance. In 2009, the Department of Water Resources updated the Model Water Efficient Landscape Ordinance pursuant to amendments to the 1991 Act. These amendments and the new model ordinance went into effect on January 1, 2010. The amended Act is applicable to any new commercial, multi-family, industrial or tract home project containing 2,500 square feet (SF) or more of landscaping. Individual landscape projects of 5,000 SF or more on single-family properties will also be subject to the Act. All landscape plans are required to include calculations verifying conformance with the maximum applied water allowance and must be prepared and stamped by a licensed landscape architect.

Title 24 Energy Standards

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality." The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission.

CALGreen contains both mandatory and voluntary measures. For non-residential land uses there are 39 mandatory measures including, but not limited to exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to non-residential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 standards, adopted May 9, 2018, will go into effect on January 1, 2020 and improve upon existing standards, focusing on three key areas: proposing new requirements for installation of solar photovoltaics for newly constructed low-rise residential buildings; updating current ventilation and indoor air quality requirements, and extending Title 24, Part 6 to apply to healthcare facilities. The 2019 standards also propose several smaller improvements in energy efficiency.

Biological Diversity v. California Department of Fish and Wildlife

In its decision in *Center for Biological Diversity v. California Dep't of Fish and Wildlife* (*Newhall*) 62 Cal.4th 204 (2015), the California Supreme Court set forth several options that lead agencies may consider for evaluating the cumulative significance of a proposed project's GHG emissions:

1. A calculation of emissions reductions compared to a "business as usual" (BAU) scenario based upon the emissions reductions in CARB's Scoping Plan, including examination of the data to determine what level of reduction from BAU a new land use development at the proposed location must contribute in order to comply with statewide goals.
2. A lead agency might assess consistency with AB 32's goals by looking to compliance with regulatory programs designed to reduce GHG emissions from particular activities.
3. Use of geographically specific GHG emission reduction plans to provide a basis for tiering and streamlining of project-level CEQA analysis.
4. A lead agency may rely on existing numerical thresholds of significance for GHG emissions, though use of such thresholds is not required.

3.4.3 City of Monrovia Climate Change Regulations

The City of Monrovia, along with Southern California Edison and Intergy Corporation, has implemented an Energy Action Plan that contains goals and specific actions to ensure that sufficient, dependable, and reasonably-priced electrical power and energy supplies are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for the city's consumers and taxpayers. The Energy Action Plan looks at self-generation and demand reduction strategies that can further offset the energy, water, and transportation needs for the city of Monrovia, including the use of renewable energy sources. Appendix A to the Energy Action Plan includes the City's environmental accords or actions; however, none of these actions are directly applicable to individual development projects. Rather, Appendix A to the Energy Action Plan primarily lists actions that apply to City equipment, electricity consumption, and GHG emissions sources, or which would be implemented on a City-wide basis.

4 PROPOSED PROJECT DESCRIPTION

The Evergreen Investment Partners, LLC proposes to implement The Arroyo at Monrovia Station Specific Plan (proposed Project). The Specific Plan would allow a 302-unit, seven-story apartment complex and an seven-level (six-story) partially underground parking structure to be constructed (see Figure Figure 4-1, Figure 4-2, and Figure 4-3). The apartment complex would also contain 7,080 sf of retail space. In addition, of the 302 units proposed, three (3) would comprise live/work units. A range of studios, and one-bedroom and two-bedroom apartments are proposed. Other tenant amenities include a pool, a pet spa, bike "kitchen" (i.e., bicycle repair area), tenant lounge, centralized mail/package delivery room, and a golf simulation room. No offsite improvements to utilities are proposed under the Project.

The proposed maximum height of the residential structures is 70 feet and 7 inches; a billboard on top of one residential structure is proposed for a maximum height of 106 feet. The parking structure would have five levels of Type III wood construction wrapping around six levels of above-grade Type I concrete parking structure and half of a level of semi-subterranean parking. There are 500 parking spaces provided in the parking structure including 19 paid parking spaces for adjacent transit users and 40 spaces for electric vehicles. A total of 171 bike parking spaces would also be provided.

Vehicular access to the Project would occur via two access driveways: one right-turn in/right-turn out driveway on Evergreen Avenue (Evergreen Avenue is a one-way eastbound street along the Project frontage) and one full access driveway on Pomona Avenue. Loading services for retail, trash pick-up, and move-in are provided inside the parking structure, at ground level, to avoid traffic congestion on the adjacent streets.

4.1.1 Project Construction

Construction activities, duration, and typical equipment usage was generated using CalEEMod, V. 2016.3.2, and are shown in detail in Section 5.3.1.

Approximately 47,112 square feet (sf) of existing structures would be demolished and construction of the proposed Project would involve 8,585 cubic yards (cy) of cut, 3,430 cy of fill, with a net export of 3,430 cy. Construction of the proposed Project is planned to begin in the third quarter of 2019 and expected to take 13 months to complete, with a target construction completion date in 2020.

4.1.2 Project Operation

Once constructed, the Project would generate emissions of regulated air pollutants and GHG from area, energy, mobile, off-road, solid waste, and water /wastewater sources. These sources are described in detail in Sections 5.3.2 and 6.2. The proposed Project also includes small stationary sources of emissions such as a back-up generator and a fire pump. The Project is anticipated to be fully operational in early 2022.

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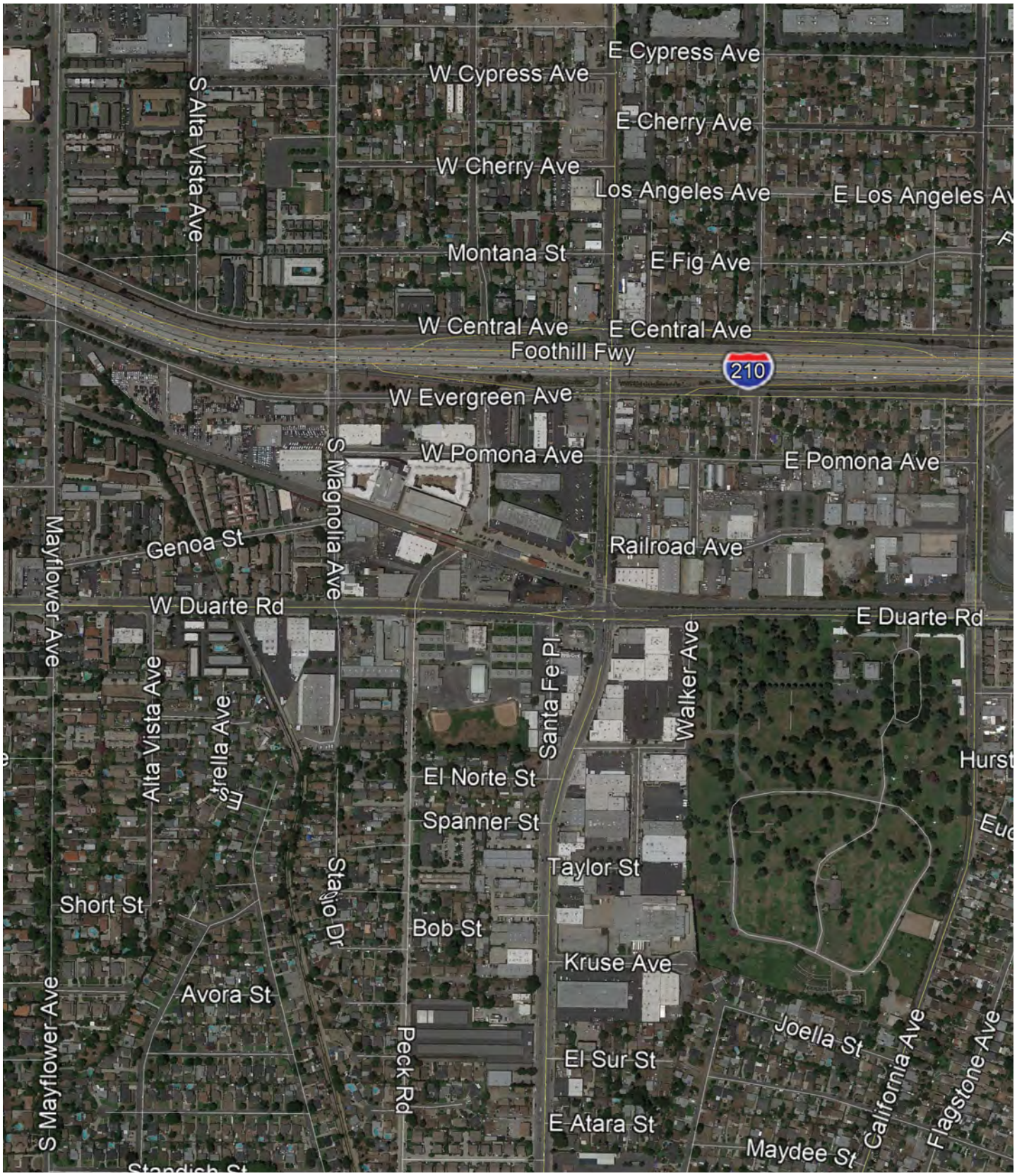
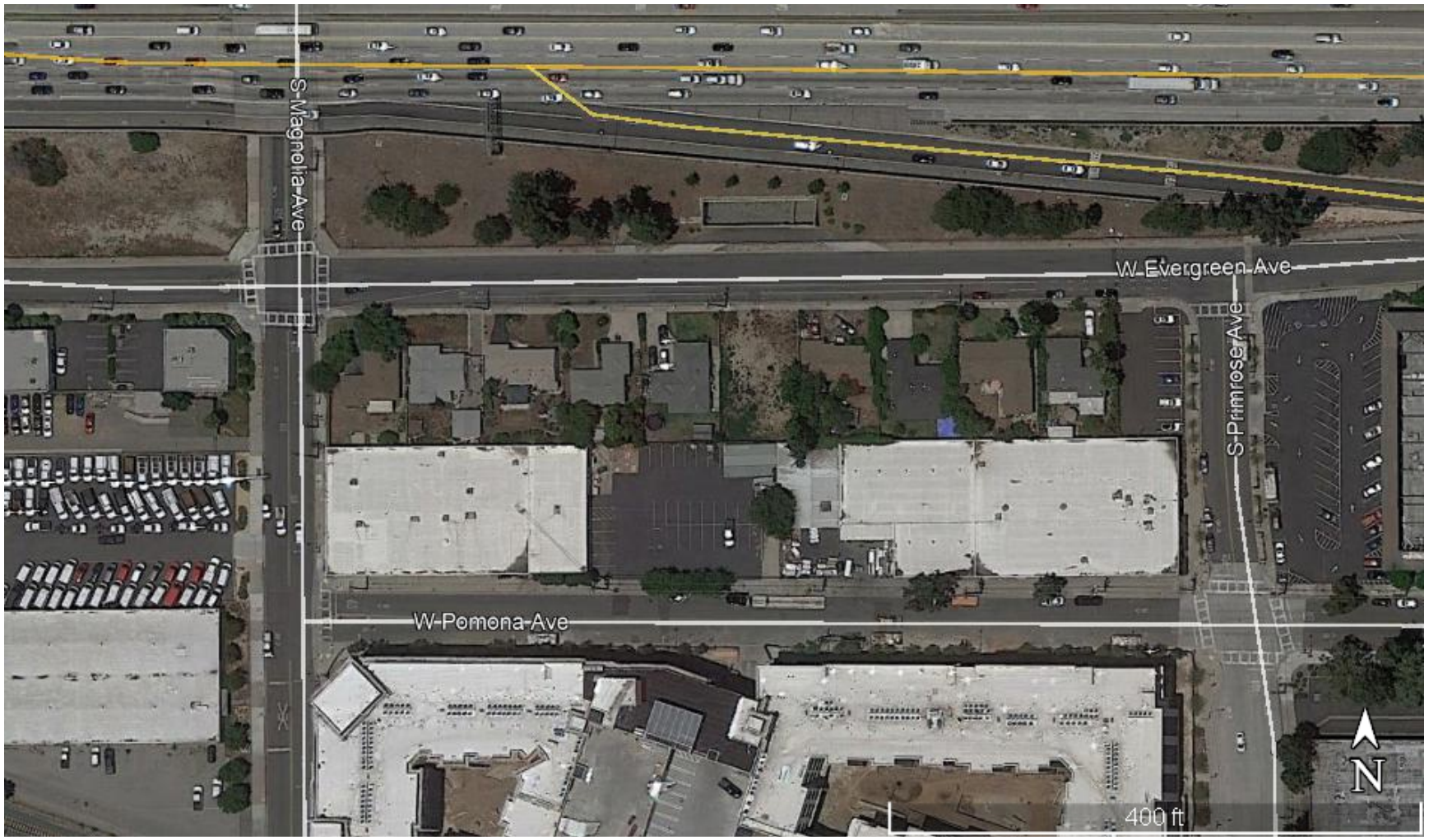


Source: ©2019 Google

Figure 4-1: Aerial View of Project Area

The Arroyo at Monrovia Station Project



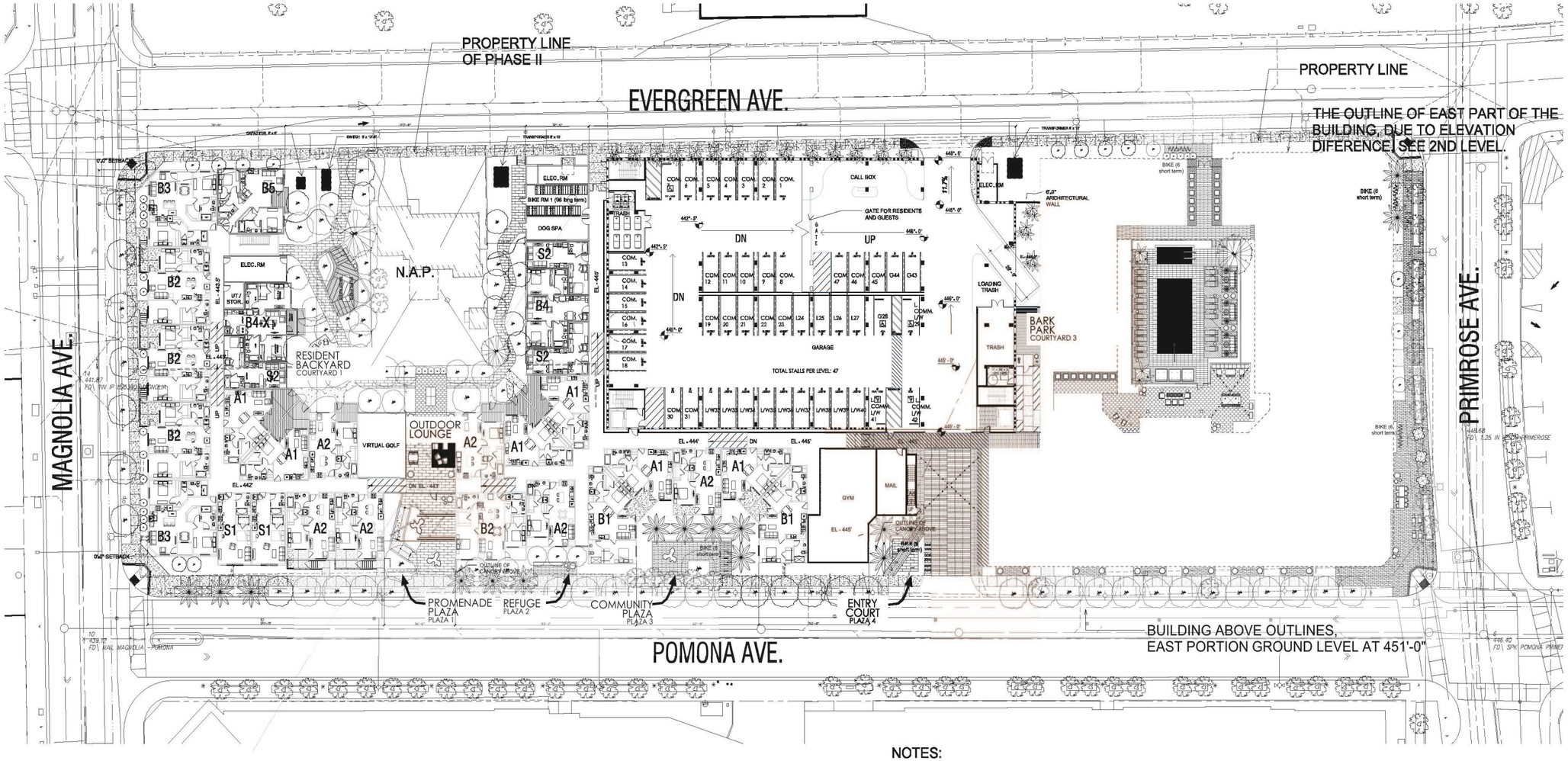
Legend:

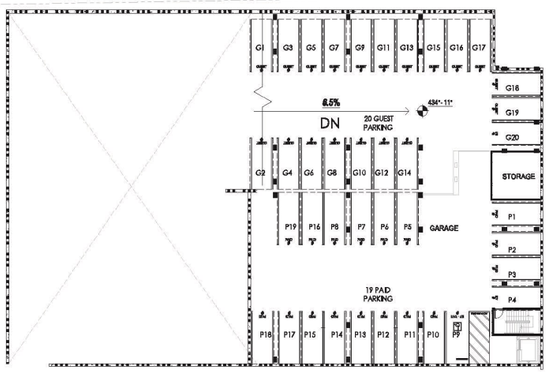
Existing parcel boundaries

The Arroyo at Monrovia Station Specific Plan Area

Figure 4-2 Project Area Map

The Arroyo at Monrovia Station Project Site, Monrovia, CA





NOTES:

ALL SETBACK DIMENSIONS SHOWN ON THE PLANS ARE TO THE WALL OF BUILDING. ARCHITECTURAL PROJECTIONS AND STOOPS ARE ALLOWED WITHIN THE SETBACK AREA

REFERENCE TO LANDSCAPE DRAWING FOR LANDSCAPE DESIGN

REFERENCE TO CIVIL DRAWINGS FOR GRADING, UTILITY, LID, TRACT MAP INFORMATION.

GROUND LEVEL PLAN

SCALE: 1" = 20'-0"
DATE:04/22/2019
JOB NO.:2017-667

A-1.0

ARCHITECTS ORANGE
144 NORTH ORANGE ST., ORANGE, CA 92886
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Figure 4-3 Site Plan: Ground Level

The Arroyo at Monrovia Station Project

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5 AIR QUALITY IMPACT ANALYSIS

This chapter evaluates the direct and indirect air quality impacts that could result from implementation of the proposed Project.

5.1 SIGNIFICANCE CRITERIA

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project could result in potentially significant impacts related to air quality if it would:

(a) Conflict with or obstruct implementation of applicable air quality plan;

(b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard;

(c) Expose sensitive receptors to substantial pollutant concentrations (i.e., carbon monoxide hot spots or TACs); or

(d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

5.1.1 Regional Significance Thresholds

Consistent with the guidance contained in Appendix G of the State CEQA Guidelines, this Report relies upon SCAQMD-recommended methods and pollutant thresholds to evaluate whether the proposed Project's emissions would violate any air quality standard, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in nonattainment criteria air pollutants. The SCAQMD's recommended thresholds of significance for criteria pollutants are shown in Table 5-1.

Table 5-1: SCAQMD-Recommended Regional Pollutant Thresholds

Pollutant	Maximum Daily Emissions (lbs/day)	
	Construction	Operation
NO_X	100	55
VOC/ROG	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
CO	550	550
Lead	3	3

Source: SCAQMD, 2015b

5.1.2 Localized Significance Thresholds

In addition to establishing thresholds of significance for emissions of criteria air pollutants on a regional level, the SCAQMD has also developed Localized Significance Thresholds (LSTs) that represent

the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable Federal or State ambient air quality standards, which would result in significant adverse localized air quality effects. The LST methodology takes into account a number of factors, including (1) existing ambient air quality in each Source Receptor Area (SRA); (2) how many acres the project would disturb in a day; and (3) how far project construction and operational activities would take place from the nearest sensitive receptor. Unlike the regional emission significance thresholds, LSTs have only been developed for NO_X, CO, PM_{10} and $PM_{2.5}$. This Report evaluates the proposed Project's potential to expose sensitive receptors to substantial pollutant concentrations pursuant to the SCAQMD Final Localized Significance Thresholds Methodology. This methodology provides screening tables for one through five-acre project scenarios, depending on the amount of site disturbance during a day, using the SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds (SCAQMD, 2016c). The construction and operational LSTs for one-acre, two-acre, and five-acre sites in SRA 9 (East San Gabriel Valley), the SRA in which the City of Monrovia is located, are shown in Table 5-2.

Table 5-2: SCAQMD Localized Significance Thresholds for Source Receptor Area 9

Pollutant Monitored	Maximum Allowable Emissions (Pounds per Day) as a Function of Receptor Distance (in Feet) from Site Boundary				
	82 Feet	**164 Feet**	**328 Feet**	**656 Feet**	**1,640 Feet**
ONE-ACRE SITE					
Construction Thresholds					
Nitrogen Oxides (NO_x)	89	112	159	251	489
Carbon Monoxide (CO)	623	945	1,914	4,803	20,721
Particulate Matter (PM_{10})	5	14	34	75	199
Particulate Matter ($PM_{2.5}$)	3	5	9	22	94
Pollutant Monitored	**Maximum Allowable Emissions (Pounds per Day) as a Function of Receptor Distance (in Feet) from Site Boundary**				
	82 Feet	**164 Feet**	**328 Feet**	**656 Feet**	**1,640 Feet**
ONE-ACRE SITE					
Operational Thresholds					
Nitrogen Oxides (NO_x)	89	112	159	251	489
Carbon Monoxide (CO)	623	945	1,914	4,803	20,721
Particulate Matter (PM_{10})	2	4	9	19	48
Particulate Matter ($PM_{2.5}$)	1	2	3	6	23
TWO-ACRE SITE					
Construction Thresholds					
Nitrogen Oxides (NO_x)	128	151	200	284	513
Carbon Monoxide (CO)	953	1,344	2,445	5,658	22,093
Particulate Matter (PM_{10})	7	22	42	84	207
Particulate Matter ($PM_{2.5}$)	5	7	12	26	100
Operational Thresholds					
Nitrogen Oxides (NO_x)	128	151	200	284	513
Carbon Monoxide (CO)	953	1,344	2,445	5,658	22,093
Particulate Matter (PM_{10})	2	6	11	20	50
Particulate Matter ($PM_{2.5}$)	2	2	3	7	25

Table 5-2: SCAQMD Localized Significance Thresholds for Source Receptor Area 9					
Pollutant Monitored	**Maximum Allowable Emissions (Pounds per Day) as a Function of Receptor Distance (in Feet) from Site Boundary**				
	82 Feet	**164 Feet**	**328 Feet**	**656 Feet**	**1,640 Feet**
FIVE-ACRE SITE					
Construction Thresholds					
Nitrogen Oxides (NO_x)	203	227	286	368	584
Carbon Monoxide (CO)	1,733	2,299	3,680	7,600	25,558
Particulate Matter (PM_{10})	14	43	63	105	229
Particulate Matter ($PM_{2.5}$)	8	11	17	35	116
Operational Thresholds					
Nitrogen Oxides (NO_x)	203	227	286	368	584
Carbon Monoxide (CO)	1,733	2,299	3,680	7,600	25,558
Particulate Matter (PM_{10})	4	11	16	26	55
Particulate Matter ($PM_{2.5}$)	2	3	5	9	28

Source: SCAQMD 2008, modified by MIG 2019

Note: The localized thresholds for NOx in this table account for the conversion of NO to NO_2. The emission thresholds are based on NO_2 levels, as this is the compound associated with adverse health effects.

5.1.3 Carbon Monoxide "Hot Spot Thresholds"

Historically, to determine whether a project poses the potential for a CO hotspot, the quantitative CO screening procedures provided in the *Transportation Project-Level Carbon Monoxide Protocol* (the Protocol) were used (UCD ITS 1997). The Protocol determines whether a project may worsen air quality by increasing the percentage of vehicles in cold start modes by two percent or more; significantly increasing traffic volumes by five percent or more; or worsening traffic flow at signalized intersections (by increasing average delay at intersections operating at level of service (LOS) E or F or causing an intersection that would operate at LOS D or better without the project, to operate at LOS E or F). With new vehicles and improvements in fuels resulting in fewer emissions, the retirement of older polluting vehicles, and new controls and programs, CO concentrations have declined dramatically in California. As a result of emissions controls on new vehicles, the number of vehicles that can idle, and the length of time that vehicles can idle before emissions would trigger a CO impact, has increased. Therefore, the use of LOS as an indicator is no longer applicable for determining CO impacts.

The Bay Area Air Quality Management District (BAAQMD) developed a screening-level analysis for CO hotspots in 2010 which finds that projects that are consistent with the applicable congestion management program, and that do not cause traffic volumes at affected intersections to increase to more than 44,000 vehicles per hour, would not result in a CO hotspot that could exceed State or Federal air quality standards (BAAQMD 2017 pg. 3-4). CO modeling was conducted for the SCAQMD's 2003 AQMP at four busy intersections during morning and evening peak hour periods as well. The busiest intersection studied in this analysis, Wilshire Boulevard and Veteran Avenue, had 8,062 vehicles per hour during morning peak hours, 7,719 vehicles per hour during evening peak hours, and approximately 100,000 vehicles per day. The 2003 AQMP estimated that the 1-hour CO concentration for this intersection was 4.6 ppm, which is less than a fourth of the 1-hour CAAQS CO standard (20 ppm) (SCAQMD 2003a). The BAAQMD screening threshold is generally consistent with the results of the CO modeling conducted for the SCAQMD's 2003 AQMP.

Therefore, for purposes of this Report, the Project would pose the potential for a CO hotspot if it would exceed the BAAQMD's screening traffic level for peak hour intersection traffic volumes (44,000 vehicles per hour) (thereby having the potential to result in CO concentrations that exceed 1-hour State [20 ppm], 1-hour Federal [35 ppm], and/or State and Federal 8-hour [9 ppm] ambient air quality standards for CO).

5.1.4 Toxic Air Contaminant Thresholds

The SCAQMD recommends preparation of a Health Risk Assessment (HRA) for large commercial or industrial projects to determine the specific health risks posed by long-term emissions of TACs from a project. Following OEHHA and SCAQMD guidance, health risks from TAC emissions are estimated based on "Individual Cancer Risk," which is the likelihood that a person exposed to TACs over 70-year lifetime will get cancer or suffer some other "non-cancer" effect (measured by what is called as a "hazard index"). Numerous weighting factors (e.g., age sensitivity factors, breathing rates, etc.) are applied during health risk calculations to account for those members of the public who may be more sensitive to pollution than others (e.g., sensitive receptors). A project is considered to have a significant effect if it results in any of the following:

- A maximum incremental cancer risk greater than or equal to 10 in one million;
- A population-wide cancer burden greater than 0.5 (in areas where cancer risk is greater than or equal to 1 in one million); or
- A chronic or acute hazard index greater than or equal to 1.0.

The California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) ruled CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." The opinion also holds that when a project has "potentially significant exacerbating effects on existing environmental hazards" those impacts are properly within the scope of CEQA because they can be viewed as impacts of the project on "existing conditions" rather than impacts of the environment on the project. The Supreme Court provided the example of a project that threatens to disperse existing buried environmental contaminants that would otherwise remain undisturbed. The Court concluded that it is proper under CEQA to undertake an analysis of the dispersal of existing contaminants because such an analysis would be focused on how the project "would worsen existing conditions." The court also found that the limited number of express CEQA provisions that require analysis of the impacts of the existing environment on a project – such as impacts associated with school siting and airports – should be viewed as specific statutory exceptions to the general rule that such impacts are not properly within CEQA's scope.

Consistent with this court ruling, the impact discussion presented below focuses on the proposed Project's effect on air quality and existing health risks, rather than the effect of existing air quality and its potential risks on the proposed Project's residents. The analysis evaluates whether the proposed Project would create or exacerbate adverse public health risk conditions at sensitive receptor locations, as identified in the SCAQMD's CEQA significance criteria.

5.2 ANALYSIS METHODOLOGY

Construction and operational emissions associated with buildout of the Project were calculated and evaluated against regional and localized significance thresholds to determine potential impacts on air quality standards, as well as to evaluate potential impacts associated with DPM emissions on sensitive receptors. In addition, a discussion is provided below on the potential for the Project to generate CO

hotspots or objectionable odors. An evaluation of whether the Project is consistent with existing plans and policies protecting air quality is also included below.

For potential environmental impacts, mitigation measures were designed to avoid or reduce each effect to a less than significant level, where possible.

5.3 ENVIRONMENTAL IMPACTS

5.3.1 Consistency with the SCAQMD AQMP

As described in Section 2.1.3, the proposed Project is within the South Coast Air Basin, which is under the jurisdiction of the SCAQMD. Pursuant to the methodology provided in Chapter 12 of the SCAQMD *CEQA Air Quality Handbook*, consistency with the AQMP is affirmed if the Project:

1) Is consistent with the growth assumptions in the AQMP; and
2) Does not increase the frequency or severity of an air quality standards violation, or cause a new one.

Consistency Criterion 1 refers to the growth forecasts and associated assumptions included in the 2016 AQMP. The 2016 AQMP was designed to achieve attainment for all criteria air pollutants within the Basin while still accommodating growth in the region. Projects that are consistent with the AQMP growth assumptions would not interfere with attainment of air quality standards, because this growth is included in the projections used to formulate the AQMP. Therefore, if the growth under the Project is consistent with the regional population, housing, and employment forecasts identified by SCAG in the RTP/SCS, plan implementation would be consistent with the AQMP, even if emissions could potentially exceed the SCAQMD's recommended daily emissions thresholds.

The proposed Project would result in 302 residential units for a total population of 630 residents (see Chapter 17, Population and Housing). The 2016 RTP/SCS population and employment projections for the City of Monrovia, as well as the increase in population and employment that would occur with the implementation of the proposed Project, and other City projects that are currently under review, are shown in Table 5-3.

Table 5-3: RTP/SCS and Specific Plan Growth Assumptions for Air Quality Impact Analysis		
Proposed Project	**Population**	**Employment**
Arroyo at Monrovia Station	630	23
Other City Projects		
Other Past, Present, and Future Projects	2,796 (A)	541(A)
Total Growth	**3,426**	**5643**
RTC/SCS Growth 2012 - 2040	**3,500**	**3,600**
Within Growth Assumptions?	**No**	**Yes**

Source: SCAG 2016; MIG 2019

Notes:

(A) According to the City's cumulative project list, approved, under-construction, or reasonably foreseeable residential projects (or portions of mixed-use projects). Assuming 20% of these are 2-bedroom units and based on the U.S. Census Bureau estimate of 1.56 people per bedroom (Linscott, Law, and Greenspan 2019).

(B) According to the City's cumulative project list approved, under-construction, or reasonably foreseeable non-residential projects (or portions of mixed-use projects) and based upon the U.S. Green Building Council's (2008) average SF/employee: General Office is 250 SF/employee, Hotel is 1,500 SF/employee, and General Retail (100,000 SF or less) is 550 SF/employee (Linscott, Law, and Greenspan 2019) .

As shown in Table 5-3, the implementation of the proposed Project, along with other City projects currently under review, would not exceed the growth assumptions contained in the AQMP. Furthermore, the proposed Project supports the overall goal of the AQMP. The RTP/SCS Transportation Control Measures, included as Appendix IV-C of the AQMP, are to focus new growth around transit/high quality transit areas. The Project is consistent with this goal because it is located less than 0.1 miles away from the Metro Gold Line and is estimated to n a 25% reduction in vehicle trips and vehicle miles travelled.

Consistency Criterion 2 refers to the CAAQS. SCAQMD has identified CO as the best indicator pollutant for determining whether air quality violations would occur since it is most directly related to automobile traffic, the emissions of which have been modeled by the SCAQMD to determine future air quality conditions. The CO hotspot analysis described below indicates that the Project would not result in a localized CO hotspot and, therefore, would not cause or contribute to an existing or projected air quality violation.

Potential impacts with respect to consistency with the SCAQMD AQMP would be less than significant.

5.3.2 Result in Cumulatively Considerable Increase in Criteria Air Pollutants

The proposed Project would generate both short-term construction emissions and long-term operational emissions. The Project's potential emissions were estimated using CalEEMod, V. 2016.3.2. As described in more detail below, with standard conditions and mitigation measures incorporated, the proposed Project would not generate short-term or long-term emissions that exceed SCAQMD-recommended pollutant thresholds.

Regional Construction Emissions

Construction activities would include demolition, site preparation, grading, construction, paving, and architectural coating work. The proposed Project's potential construction emissions were modeled using CalEEMod, Version 2016.3.2 (see Appendix A). Construction phase and duration and type and amount of equipment used during construction was generated using CalEEMod default assumptions and modified as necessary to reflect additional-Project-specific construction activities, including:

- Demolition of approximately 47,112 square feet of existing building space and associated debris hauling activities; and
- Export of 3,430 cubic yards of soil during the Project's grading phase.

The unmitigated maximum daily construction emissions generated by the proposed Project are shown in Table 5-4.

Table 5-4: Unmitigated Regional Construction Emissions Estimates

Season	Total Unmitigated Maximum Daily Emissions (Pounds Per Day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer 2019	4.3	44.7	32.0	0.1	5.0	2.7
Summer 2020	219.2	25.6	30.1	0.1	5.0	2.0
Winter 2019	4.5	45.0	31.0	0.1	5.0	2.7
Winter 2020	219.2	25.7	29.2	0.1	5.0	2.0
SCAQMD CEQA Threshold	75	100	550	150	150	55
Threshold Exceeded?	**Yes**	No	No	No	No	No

Source: MIG 2019 (see Appendix A).

As shown in Table 5-4, the maximum daily construction emissions generated by the Project would be below applicable SCAQMD thresholds for all pollutants except ROG in 2020, when peak architectural coating application activities would occur.

To reduce potential ROG emissions generated during coating application activities to levels below SCAQMD thresholds, the City would require the applicant to implement standard condition SC AIR-1, which requires the use of SCAQMD Rule 1113 "super compliant" coatings with a lower VOC content than the CalEEMod default assumption, as well as the application of coatings with efficient spray equipment. The City would also require the Applicant to implement mitigation measure MM AIR-1, which imposes idling restrictions consistent with General Plan EIR Mitigation Measure AIR-C.

The standard VOC content assumption for residential and non-residential coatings is 50 and 100 grams per liter, respectively. Thus, the use of coatings with a VOC content of less than 10 grams per liter of coating would substantially reduce ROG emissions during coating application activities, as shown in Table 5-5.

Table 5-5: Mitigated Regional Construction Emissions Estimates

Season	Total Mitigated Maximum Daily Emissions (Pounds Per Day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer 2019	4.4	44.7	32.0	0.1	5.0	2.7
Summer 2020	43.0	25.6	30.1	0.1	4.8	2.0
Winter 2019	4.5	45.0	31.0	0.1	5.0	2.7
Winter 2020	43.1	25.7	29.2	0.1	4.8	2.0
SCAQMD CEQA Threshold	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Source: MIG 2019 (see Appendix A)

As shown in Table 5-5, the maximum daily construction emissions generated by the Project would be below the SCAQMD's regional construction emission thresholds with the inclusion of standard conditions and mitigation measure AIR-1. Thus, the standard conditions and mitigation measure ensure that the Project's regional construction emissions would have a less than significant effect.

Standard Conditions

SC AIR-1: Comply with South Coast Air Quality Rule 1113 to reduce VOC emissions from architectural coating applications. Prior to the issuance of a building permit for the Project, the applicant shall submit, to the satisfaction of the Planning Division, a Coating Restriction Plan (CRP), consistent with South Coast Air Quality Management District (SCAQMD) guidelines. The applicant shall include in any construction contracts and/or subcontracts a requirement that Project contractors adhere to the requirements of the CRP. The CRP shall include a requirement that all interior and exterior residential and non-residential architectural coatings used in Project construction meet the SCAQMD "super compliant" coating VOC content standard of less than 10 grams of VOC per liter of coating. The CRP shall also specify the use of high-volume, low pressure spray guns during coating applications to reduce coating waste.

Requirements and Timing: Applicant shall receive Planning Division approval of a Coating Restriction Plan (CRP) prior to receipt of building permits.

Monitoring: City Planning staff shall conduct site inspections to ensure that the CRP is followed during construction.

Mitigation Measures

MM AIR-1: Idling Restrictions: Idling of diesel-powered vehicles and equipment shall not be permitted during periods of non-active vehicle use. Diesel-powered engines shall not be allowed to idle for more than 5 consecutive minutes in a 60-minute period when the equipment is not in use, occupied by an operator, or otherwise in motion, except as follows:

- When equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;
- When it is necessary to operate auxiliary systems installed on the equipment, only when such system operation is necessary to accomplish the intended use of the equipment;
- To bring the equipment to the manufacturer's recommended operating temperature;
- When the ambient temperature is below 40 degrees F or above 85 degrees F; or
- When equipment is being repaired.

Requirements and Timing: Mitigation measure shall be printed on construction drawings and included as a requirement in the construction contract.

Monitoring: City Planning staff shall conduct site inspections during construction to ensure that the mitigation measure is adhered to.

Regional Operational Emissions

Once operational, the Project would result in long-term emissions from area, energy, and mobile sources. The net change in emissions of regulated air pollutants that would occur with implementation of the Project was modeled using CalEEMod, Version 2016.3.2. The operation emissions for the Project were modeled based on the Project's first full year of operation (2022), using default data assumptions provided by CalEEMod, with the following Project-specific modifications:

- The default trip generation rates for the existing land use types were replaced with trip generation rates contained in the Traffic Impact Study (TIS) prepared for the Project (Linscott, Law, and Greenspan 2019). The Project TIS provided trip generation rates for peak weekday activities. Accordingly, the residential average daily traffic rate contained in the TIS was adjusted by a factor of 0.96 for Saturday trip rate and 0.88 for Sunday trip rate to account for reduced weekend trip rates (this provides a more accurate estimate of total annual emissions). Retail weekend trip rates were also adjusted, by a factor of 1.17 and 0.59 for Saturday and Sunday accordingly.
- The default electrical efficiency intensity values for non-residential land uses were adjusted downwards to reflect the recent adoption of the 2019 energy efficiency standards. The 2019 energy efficiency standards took effect on January 1, 2020 and will reduce energy use from residential and non-residential development through the required installation of solar photovoltaic systems, electric demand response compliance options such as battery storage systems, stronger building envelope insulation for attics, walls, and windows, and use of light-emitting diode lighting systems.
- Woodstoves and hearths were excluded pursuant to City General Plan requirements and SCAQMD Rule 445 (see standard condition SC AIR-2).
- One 50-horsepower diesel-fueled back-up generator and one 50-horsepower, diesel-fueled fire pump were presumed to be present on-site and operate a total of 18 hours per year.

The net change in long-term operational emissions that would be generated by buildout of the proposed Project is shown in Table 5-6 below.

Table 5-6: Operational Emissions Estimates

Emission Scenario	Maximum Daily Emissions (Pounds Per Day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area Sources	8.6	4.5	26.8	0.0	0.5	0.5
Energy Sources	0.1	1.0	0.4	0.0	0.1	0.1
Mobile Sources	2.3	4.3	32.0	0.1	9.8	2.7
Total Buildout Emissions(B)	11.0	9.9	59.3	0.1	10.4	3.3
Total Existing Emissions(C)	4.1	4.1	16.1	0.0	3.3	1.4
Net Change in Emissions Levels						
Total Net Change	+7.0	+5.8	+43.1	+0.1	+6.9	+1.9
SCAQMD CEQA Threshold	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

Source: MIG 2019 (see Appendix A)

(A) Emissions presented are worst-case emissions and may reflect summer or winter emissions levels. Maximum daily ROG, CO, SOX emissions occur during the summer. Maximum daily NOX emissions occur during the winter. In general, due to rounding, there is no difference between summer and winter PM10 and PM2.5 emissions levels for the purposes of this table.

(B) Totals may not equal due to rounding. Stationary sources would add less than 0.000 pounds per day of emissions to the project's area, energy, and mobile source total. Buildout emissions are based upon construction of 439 units assumed in the TIA, versus the proposed 436 units. Therefore, emissions are overestimates.

(C) See Table 2-5.

As shown in Table 5-6, the maximum daily operational emissions associated with the proposed Project would not exceed the SCAQMD's recommended regional pollutant thresholds for all pollutants.

Standard Conditions

SC AIR-2: Natural Gas Fireplaces. All residential fireplaces installed shall be fueled by natural gas. Wood stoves and wood burning fireplaces shall be prohibited. (Consistent with General Plan EIR Mitigation Measure AIR-D).

Requirements and Timing: Standard condition shall be printed on construction drawings.

Monitoring: City Planning staff shall conduct site inspections during construction to confirm condition is adhered to.

5.3.3 Sensitive Receptors And Substantial Pollutant Concentrations

The proposed Project would generate both short-term construction emissions and long-term operational emissions that could impact sensitive residential receptors located near the Project; however, as described in more detail below, the proposed Project would not generate short-term or long-term emissions that exceed SCAQMD-recommended localized significance thresholds or result in other substantial pollutant concentrations.

Localized Significance Thresholds Analysis

Construction Emissions

The Project's maximum daily construction emissions are compared against the SCAQMD's-recommended LSTs in Table 5-2. Consistent with the SCAQMD's LST methodology, the emissions included in the construction LST analysis are onsite emissions only, and the LST thresholds against which these onsite emissions are compared are based on the Project size, in acres, as determined using the specific equipment list generated by the CalEEMod project file and the SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds (SCAQMD 2016c)[4]. The LST thresholds are for SRA 9 (East San Gabriel Valley), the SRA in which the proposed Project is located, and are based on a receptor distance of 25 meters (82 feet), the closest LST receptor distance threshold recommended for use by the SCAQMD.

The emissions presented in Table 5-75-6 incorporate certain best available control measures the Project would be subject to pursuant to SCAQMD Rule 403, Fugitive Dust. Specifically, the CalEEMod project file applies a 60% to 67% total reduction in PM10 and PM2.5 fugitive dust emissions through site watering (three times daily) and replacement of ground cover. These estimated reductions are consistent with the reductions realized by implementation of the numerous best available control measures contained in SCAQMD Rule 403 (also shown as standard condition SC AIR-3).

As shown in Table 5-75-6, the maximum daily onsite emissions generated during demolition, site preparation, and grading activities associated with the Project would not exceed the SCAQMD's recommended LST thresholds. The onsite emissions levels during all other construction phases (building construction, paving, architectural coating) would be less than the values presented in Table 5-75-6, and below the SCAQMD's LST thresholds for a one-acre site (a conservative comparison since the Project area is larger than one acre in size).

[4] According to the SCAQMD's *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, the maximum number of acres disturbed on the peak day of use per crawler tractor, grader, and rubber tired dozer is 0.5 acres per 8 hour day, while the maximum number of acres disturbed on the peak day of use per scraper is 1 acre per 8 hour day.

Table 5-75-6: LST Construction Analysis				
Construction Phase	**Maximum Daily Emissions (Pounds per Day)(A)**			
	NO_X	**CO**	**PM_{10}(E)**	**$PM_{2.5}$(E)**
Demolition	22.7	14.9	2.2	1.3
Site Preparation	21.5	11.9	1.5	0.9
Grading	22.7	10.2	3.6	2.3
Building Construction 2019	18.9	15.3	1.1	1.0
Building Construction 2020	17.4	14.9	0.9	0.9
Paving	11.6	11.8	0.7	0.6
Architectural Coating	1.6	1.8	0.1	0.1
SCAQMD LST Threshold (1.5-Acre)(B)	**108.5**	**784.0**	**6.0**	**3.9**
Threshold Exceeded?	No	No	No	No

Source: MIG 2019 (see Appendix A)

(A) Emissions presented are worst-case total emissions and may reflect summer or winter emissions levels.

(B) Grading would involve the use of one grader and one rubber-tired dozer, which equals a 1.5-acre project site for LST purposes (1*1.0)+(1*0.5)=1.5. Accordingly, a 1.5-acre LST threshold was developed using linear regression.

(C) PM emissions assume compliance with SCAQMD Rule 403 best available control measures for site watering and replacing ground cover.

Standard Conditions

SC AIR-3: Comply with South Coast Air Quality Management District Rule 403, Fugitive Dust, by incorporating best available control measures during construction.

Requirements and Timing: Standard condition shall be printed on construction drawings and included as a requirement in the construction contract.

Monitoring: City Planning staff shall conduct site inspections during construction to ensure that the standard condition is adhered to.

Operational Emissions

The Project's maximum daily operational emissions are compared against the SCAQMD's-recommended LSTs in Table 5-. Consistent with the SCAQMD's LST methodology, the emissions included in the operational LST analysis are onsite emissions only, and the LST thresholds against which these onsite emissions are compared are based on the Project size, in acres. The LST thresholds are for SRA 9 (East San Gabriel Valley), the SRA in which the Project is located and are based on a receptor distance of 25 meters (82 feet), the closest LST receptor distance threshold recommended for use by the SCAQMD.

Table 5-8: LST Operational Analysis				
Emissions	**Maximum Onsite Pollutant Emissions (Pounds Per Day)**			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	4.5	26.8	0.0	0.5
Energy Sources	1.0	0.4	0.0	0.1
Mobile Sources(A)	0.1	0.7	<0.00(B)	0.1
Stationary Sources	<0.00(B)	<0.00(B)	<0.00(B)	<0.00(B)

Table 5-8: LST Operational Analysis				
Emissions	Maximum Onsite Pollutant Emissions (Pounds Per Day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Subtotal Emissions(C)	5.6	27.9	0.0	0.7
SCAQMD LST Threshold(D)	**128**	**953**	**2**	**2**
Threshold Exceeded?	No	No	No	No

Source: MIG 2019 (see Appendix A).

(A) Mobile source emissions estimates reflect potential onsite vehicle emissions only and were derived by assuming 2% of operational mobile source emissions in Table 5-6 will occur onsite.

(B) "<0.00" does not indicate the emissions are less than or equal to 0; rather, it indicates the emission is smaller than 0.01 but larger than 0.000.

(C) Emissions presented are worst-case emissions and may reflect summer or winter emissions levels. In general, due to rounding, there is no difference between summer and winter emissions levels for the purposes of this table.

(D) LST threshold is conservatively based on a 5.0-acre project size and 25-meter (82-foot) receptor distance.

As shown in Table 5-, the maximum daily onsite emissions generated during operation of the proposed Project would not exceed the SCAQMD's recommended LST thresholds.

Standard Conditions

Refer to standard condition SC AIR-2 above.

Carbon Monoxide Hot Spots

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near high volume intersections. Several screening procedures have been developed by air districts throughout the state to assess whether a project may result in a CO impact. For example, the Bay Area Air Quality Management District (BAAQMD) developed a screening threshold in 2010 which states that any project involving an intersection experiencing 44,000 vehicles per hour would require detailed analysis (BAAQMD, 2017 pg. 3-4). Additionally, the SCAQMD's 2003 AQMP and *1992 Federal Attainment Plan for Carbon Monoxide* demonstrated that CO levels were below the CAAQS at an intersection with a daily traffic volume of up to approximately 100,000 vehicles per day. According to the City's General Plan Circulation and Noise Elements, there are no roadways in the City that experience hourly volumes close to 44,000 vehicles or more or daily volumes of 100,000 vehicles or more. Based on the TIS prepared for the Project, the maximum number of vehicles moving through any study intersection would be substantially below the screening threshold of 44,000 vehicles per hour for a CO hotspot analysis. Therefore, the Project would not cause or significantly contribute to CO concentrations that exceed State or Federal ambient air quality standards for CO. This impact would be less than significant.

Construction Fugitive Dust and DPM Emissions

Construction activities associated with the proposed Project would result in demolition, site preparation, grading, and other activities that would generate fugitive dust; however, as shown under above, the total PM10 and PM2.5 emissions generated during construction of the Project would be below SCAQMD LST thresholds. The SCAQMD's LST thresholds represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable Federal or State AAQS. Thus, since Project construction emissions would not exceed applicable LST thresholds, the proposed Project would not expose sensitive receptors to substantial fugitive dust concentrations.

A portion of the PM_{10} and $PM_{2.5}$ emissions generated during construction of Project (Table 5-75-6) would be DPM. DPM is a TAC that can potentially cause substantial adverse health risks at concentrations

lower than the ambient air quality standards for PM_{10} and $PM_{2.5}$ set by the Federal and State CAA. Equipment with diesel engines would be used during all phases of the proposed Project development, and some construction activities would occur as close as approximately 60 feet away from sensitive receptor locations (e.g., receptors across South Primrose Avenue and South Myrtle Avenue), although most construction activities on the interior of the proposed project site would occur 200 feet or more from sensitive receptor locations.

Furthermore, implementation of idling restrictions under mitigation measure MM AIR-1 would minimize DPM emissions from construction equipment. Second, as shown in Figure 2-1, the prevailing daytime wind direction is from the west/southwest at the nearest meteorological station maintained by the SCAQMD in Azusa (less than five miles east of the Project area). Wind conditions at this location are considered representative of wind conditions in the Project area, meaning that DPM emissions generated by construction equipment would generally be pushed to the east/northeast, away from the closest sensitive residential receptors, and pollutants would quickly disperse over distance. Finally, potential long-term adverse health risks from DPM are evaluated assuming a constant exposure to emissions over a 70-year lifetime, 24 hours a day, seven days a week, with increased risks generally associated with increased proximity to emissions sources. Since construction activities would only generate DPM emissions on an interim, short-term basis, DPM emissions from construction activities would be unlikely to result in adverse health effects to existing sensitive receptors that exceed the SCAQMD's significance criteria[5]. Therefore, construction activities associated with buildout of the Project would not expose nearby sensitive receptors to substantial levels of DPM that would pose a significant adverse health risk.

Operational – Health Risks Related to Exposure from I-210 Emissions

The proposed Project would be exposed to emissions of DPM from vehicles travelling along the I-210 freeway in both directions. Diesel vehicles include trucks, motorcycles, recreational vehicles, and buses[6] MIG has prepared an operational health risk assessment for the proposed Project consistent with SCAQMD guidance (MIG, 2019). The risk assessment evaluated the maximum increase in cancer risk at the point of maximum impact, maximum exposed individual receptor, and maximum exposed individual worker. The health risk assessment determined the maximum exposed individual receptor is located at the northeast corner of the project boundary. The incremental increase in cancer risk at this location is approximately 35.2 in one million. This value is above the SCAQMD's cancer risk threshold of 10.0 in one million; however, this is not an impact under CEQA. The non-cancer hazard index at all properties from long-term exposure to DPM emissions would be less than SCAQMD threshold of 1.0. Pursuant to the California Supreme Court's Decision in CBIA v. BAAQMD, CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." Therefore, the health risks associated with the I-210 are evaluated and presented for information purposes only.

As described above, the proposed project would be exposed to DPM emissions and associated adverse health risks from vehicle traffic on the adjacent I-210. Although the potential effect of I-210 emissions on the future

[5] The SCAQMD has established the following thresholds of significance for TAC emissions: Maximum Incremental Cancer Risk ≥ 10 in 1 million; Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million); Chronic & Acute Hazard Index ≥ 1.0 (project increment).

[6] Gasoline and diesel-fueled vehicles travelling on the I-210 would emit other TACs besides DPM; however, these other TACs would be emitted in much lower quantities than DPM. Accordingly, this analysis focuses on the risk from DPM emitted by vehicles travelling on the I-210 as an overall indicator of potential adverse health risks from mobile sources operating near the site.

residential receptors associated with the proposed project is not considered an impact of the project for the purposes of CEQA, the project's potential to exacerbate existing I-210 DPM emissions and corresponding adverse health hazards is within the scope of CEQA and is evaluated below.

According to Caltrans traffic data, the segment of the I-210 adjacent to the proposed project area carries approximately 252,000 vehicles per day. Based on CARB's EMFAC2017 model, approximately 3.8% of all vehicles in the Los Angeles (South Coast) region are diesel vehicles, meaning there are approximately 9,585 diesel vehicles that pass by the project area on a daily basis, emit DPM, and contribute to potential existing adverse health risks (MIG, 2019.) The proposed project would not significantly exacerbate I-210 emissions for several reasons. First, according to the Traffic Impact Analysis prepared for the project, the proposed project would generate 1,107 net new total daily vehicle trips, of which approximately 55 (3.8%) would be diesel trips (based on the regional percentage of diesel vehicles in the Los Angeles sub-region). Even if all project trips were added to the I-210 (which would not be the case), the project would increase diesel vehicle trips on the I-210 by less than 0.6% on a daily basis. Furthermore, the HRA prepared for the project indicates the predominant vehicle types that contribute to diesel emission on the I-210 are trucks and buses. Automobiles and light duty trucks that are most likely to be generated by the project represent less than 3% of the total daily DPM emissions (and associated risk) generated by vehicle traffic on the I-210 adjacent to the project area. This means that the proposed Project could, at worst case, change DPM emissions adjacent to the project area by no more than approximately 2%[7]. This change is not considered a significant exacerbation of the existing conditions and, therefore, is a less than significant impact.

5.3.4 Odors

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations (such as manufacturing uses that produce chemicals, paper, etc.). The proposed Project does not include such sources but would result in the construction of a new apartment complex and parking garage that could generate odors related to vehicle parking and refuse collection (e.g. oils, lubricants, fuel vapors, short-term waste odors). These activities would not generate sustained odors that would affect substantial numbers of people. In addition, although industrial land uses are present east of the Project area, these sources are unlikely to generate objectionable odors in the Project area given the typical meteorological patterns present (see Figure 2-1).

[7] This estimates assumes the project results in a 0.6% increase in traffic associated with approximately 3% of the daily DPM emissions shown in 7-13.

6 GREENHOUSE GAS IMPACT ANALYSIS

This chapter evaluates the GHG impacts that could result from implementation of the proposed Project. Unlike air quality, which is influenced by local and regional factors and is therefore considered on the local or regional scale, the effects of global climate change are the result of GHG emissions worldwide; individual projects do not generate enough GHG emissions to influence global climate change. Thus, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to global climate change is cumulatively considerable.

6.1 SIGNIFICANCE CRITERIA

In accordance with Appendix G of the State CEQA Guidelines, the proposed Project could result in potentially significant GHG impacts if it would:

(a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG; or

To date, the SCAQMD has not adopted a numerical threshold for determining the significance of GHG emissions in the Basin; however, to provide guidance to local lead agencies on determining the significance of GHG emissions in their CEQA documents, the SCAQMD convened a GHG Significance Threshold Working Group (Working Group) meeting on April 30, 2008. In December, 2008, the SCAQMD Governing Board adopted a GHG significance threshold of 10,000 MTCO2e for industrial projects where the SCAQMD is lead agency; however, the City would be the lead agency for the proposed Project. The SCAQMD has not formally adopted GHG thresholds for local lead agency consideration; however, to date, the Working Group has convened a total of 15 times, with the last meeting taking place on September 28, 2010. At this last meeting, SCAQMD presented their proposed GHG thresholds for use by local lead agencies. The proposed thresholds are tiered as follows:

- Tier 1 consists of evaluating whether or not the project qualifies for applicable CEQA exemptions.
- Tier 2 consists of determining whether or not a project is consistent with a greenhouse gas reduction plan. If a project is consistent with a greenhouse gas reduction plan, it would not have a significant impact.
- Tier 3 consists of using screening values at the discretion of the Lead Agency; however, the Lead Agency should be consistent for all projects within its jurisdiction. The following thresholds were proposed for consideration:
  - 3,000 MTCO2e/year for all land use types; or
  - 3,500 MTCO2e/year for residential; 1,400 MTCO2e/year for commercial; 3,000 MTCO2e/year for mixed-use projects.
- Tier 4 has three options for projects that exceed the screening values identified in Tier 3:
  - Option 1: Reduce emissions from business as usual by a certain percentage (currently undefined)
  - Option 2: Early implementation of applicable AB 32 Scoping Measures
  - Option 3: For plan-level analyses, analyze a project's emissions against an efficiency value of 6.6 MTCO2e/year/SP in 2020 and 4.1 MTCO2e/year/SP by 2035. For project-level

analyses, analyze a project's emissions against an efficiency value of 4.8 and 3.0 MTCO2e/year/SP for the 2020 and 2035 calendar years, respectively.

6.2 ANALYSIS METHODOLOGY

Tier 3 threshold was used as significance criteria in this analysis to determine if GHG emissions under the proposed Project would have a significant effect on the environment.

6.3 ENVIRONMENTAL IMPACTS

6.3.1 Generation of Greenhouse Gas Emissions

Construction Emissions. Construction activities would generate GHG emissions primarily from equipment fuel combustion as well as worker, vendor, and haul trips to and from the Project site during demolition, site preparation, grading, building construction, paving, and architectural coating activities. Construction activities would cease to emit GHG upon completion, unlike operational emissions that would be continuous year after year until the Project is decommissioned. Accordingly, the SCAQMD recommends amortizing construction GHG emissions over a 30-year period. This normalizes construction emissions so that they can be grouped with operational emissions and compared to appropriate thresholds, plans, etc. GHG emissions from construction of the proposed Project were estimated using CalEEMod, Version 2016.3.2, based on the anticipated construction schedule and construction activities described earlier in this report. The estimated construction GHG emissions resulting from the Project are presented below in Table 6-1.

Table 6-1: Estimated Construction GHG Emissions

Construction Year	GHG Emissions (Metric Tons / Year)			
	CO_2	CH_4	N_2O	Total $MTCO_2e$
2019	186.4	0.02	0.00	186.9
2020	640.2	0.06	0.00	641.7
Total	826.6	0.1	0.00	828.6
Total Amortized Emissions(A)	27.6	<0.00(B)	0.00	27.6

Source: MIG 2019 (see Appendix C1).

(A) Emissions amortized over 30 year-period for inclusion in total GHG emissions.

(B) "<0.0" does not indicate the emissions are less than or equal to 0; rather, it indicates the emission is smaller than 0.01, but larger than 0.000.

Operational Emissions. Once operational, the Project would result in continuous GHG emissions from mobile, energy, and area sources. Mobile sources would result primarily in emissions of CO_2, with emissions of CH_4 and NO_2 also occurring in minor amounts. In addition to mobile sources, GHG emissions would also be generated from natural gas usage, electricity use, water conveyance and use, wastewater treatment, and solid waste disposal. Natural gas use would result in the emission of two GHGs: CH_4 (the major component of natural gas) and CO_2 (from the combustion of natural gas). Electricity use associated with both the physical usage of the development, as well as the energy needed to transport water/wastewater, would result in the production of GHGs if the electricity is generated through non-renewable sources (i.e., combustion of fossil fuels). Solid waste generated by the proposed Project, would contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy

when transporting and managing the waste. In addition, landfilling, the most common waste management practice, results in the release of CH_4 from the decomposition of organic materials.

Potential operational GHG emissions resulting from the Project were modeled using CalEEMod, Version 2016.3.2. The total GHG emissions associated with the Project are presented below in Table 6-2, based on an operational year of 2022. To account for all potential GHG emissions generated through construction and operational activities, the amortized construction emissions calculated in Table 6-1 have been added to Project operational GHG emissions estimate.

As shown in Table 6-2, construction and operation of the Project would result in a net increase in GHG emissions equal to 1,762 $MTCO_2e$ per year. This net emissions increase is below the SCAQMD Tier 3 "bright-line" threshold of 3,000 $MTCO_2e$.

Table 6-2: Estimated Operational GHG Emissions

Emission Source	GHG Emissions ($MTCO_2e$ / Year)		
	Existing[A]	Proposed	Net Change
Area	2.70	67.2	+64.5
Energy	190.9	664.5	+473.6
Mobile[B]	456.3	1,609.4	+1,153.1
Stationary	–	0.3	+0.3
Waste	32.1	18.4	-13.7
Water	49.8	106.2	+56.4
Amortized Construction	–	27.6	+27.6
Total[C]	731.8	2,466.1	+1,761.8
SCAQMD Tier 3 Screening Threshold	–	–	3,000
SCAQMD Tier 3 Threshold Exceeded?	–	–	No

Source: MIG 2019 (see Appendix A).
Notes:
(A) See Table 3-3 for existing GHG emissions in Project Plan area.
(B) Totals may not equal due to rounding.

6.3.2 Consistency With GHG Reduction Plans

The proposed Project would not conflict with CARB's Scoping Plan, the regional SCS, the City's General Plan, or the City's Energy Plan. The Project's consistency with these plans is described in more detail below.

CARB Scoping Plan

As discussed under Section 3.4.2, the 2017 Climate Change Scoping Plan is CARB's primary document used to ensure State GHG reduction goals are met. The *2017 Climate Change Scoping Plan's* primary objective is to identify the measures needed to achieve the 2030 reduction target established under Executive Order B-30-15 and SB 32. The major elements of the plan are generally geared toward actions either CARB or other state entities will pursue, such as, but not limited to:

- Implementing the LCFS, with an increased stringency (18 percent by 2030);
- Implementation of SB 350, which expands the RPS to 50 percent and doubles energy efficiency savings; and

- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing CH_4 and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by the year 2030.

Although most of these measures would be implemented at the State level, the GHG reductions achieved by these state measures would be realized at the local level. For example, regardless of actions taken by the City, emissions generated through gasoline combustion in motor vehicles within Monrovia would produce less GHG in 2030 than they do now.

In addition to State measures, Appendix B to CARB's *2017 Climate Change Scoping Plan* identifies potential actions that could be undertaken at a local level to support the State's climate goals. This appendix is organized into two categories. Category A applies to code and broad planning documents and is not applicable to a Specific Plan. Category B includes measures that could be considered for individual projects. The Project is consistent with many of the suggested measures in Appendix B through required compliance with SCAQMD rules and the California Green Building Standards Code. The proposed Project, therefore, would not conflict with the goals of the *2017 Climate Change Scoping Plan.*

Southern California Association of Governments RTP/SCS

As described in Section 3.4.2, the 2016 RTP/SCS is a growth strategy and transportation plan whose primary intent is to demonstrate how the SCAG region will meet its GHG reduction target through the year 2040. Many of the measures included in the RTP/SCS are focused on: the expansion of, and access to, mass transit (e.g., light rail, commuter rail, bus rapid transit, etc.); planning growth around livable corridors; and locating new housing and job growth in high quality transit areas. Approval of the proposed Project would support these goals, because it (1) results in and encourages infill development and/or involves the revitalization of already developed areas, (2) has existing, supporting transit infrastructure and enhances the use of this infrastructure (the METRO Station is a 0.2-mile walk from to the east of the Project boundary), and (3) encourages the use of non-vehicular modes of transportation.

Under California law, SCAG is required to implement strategies that reduce per capita GHG emissions in the region by eight percent by 2020—compared with 2005 levels—and by 13 percent by 2035 (SCAG 2016). Although the existing emissions in the Project area have not been estimated for Year 2005, it is very likely that 2005 GHG emissions levels (and efficiency metrics) would be higher than the Year 2018 existing conditions presented in Table 3-3. As shown in Table 6-5, the Project is anticipated to reduce per capita GHG emissions by approximately 75 percent from existing conditions, which exceeds the progress needed to achieve the mandated reduction in GHG emissions of 13 percent by 2035. One of the reasons the Project results in such low GHG emissions is the Project area's proximity to the Monrovia METRO Station. The proximity of this transit station to the Project is estimated to reduce Project-related trips by 20%.

Since the implementation of the proposed Project would result in transit-oriented development, support the use of mass transit, and result in vehicle trips that are approximately 20% lower than standard values due to the proximity of the Monrovia METRO station, the proposed Project would be consistent with the SCAG 2016 RTP/SCS.

City of Monrovia Energy Action Plan

The City of Monrovia has an *Energy Action Plan* that seeks to decrease energy use and dependence. The plan suggests the need for citizen involvement and focuses heavily on actionable items related to managing City facilities and vehicles. Additionally, the City requires consistency with energy

saving strategies (such as Title 24 which requires energy efficient practices). The Project is consistent with Title 24 building codes, and therefore is consistent with the goals of the Energy Action Plan.

6.3.3 Energy Consumption and Conflict with Renewable Energy Plans

Short-term energy demand would result from construction activities occurring as a result of buildout of the Project. Short-term demand would include energy needed to power worker and vendor vehicle trips as well as construction equipment. Long-term energy demand would result from operation of businesses and land uses within the Project area, which would include activities such as lighting, heating and cooling of structures, etc. Operational energy demands would typically result from vehicle trips, electricity and natural gas usage, and water and wastewater conveyance.

As estimated by the TIS prepared for the Project and the emissions modeling conducted using CalEEMod defaults, buildout of the proposed Project is anticipated to result in an increase in trip generation by approximately 1,107 trips per weekday, natural gas consumption by 3,533,135 kBTU annually, and electricity consumption by 1,124,187 kWh annually. Although trip generation and energy consumption would increase under implementation of the proposed project, consumption rates per service population would decrease. Buildout of the Project would result in a trip generation decrease from 6.15 weekday trips/service population to 2.14 weekday trips/service population. Natural gas consumption would also reduce from 10,502 kBtu/service population/year to 6,213 kBtu/service population/year, and annual electricity consumption would decrease from 19,473 kWh/service population/year to 3,620 kWh/service population/year.[8]

Although implementation of the Project may increase overall VMT through additional trips and energy and natural gas usage compared to current conditions, increased density would provide for more efficient use of resources within the City, thus ensuring that the proposed Project would not result in the wasteful or inefficient use of energy resources. This would be a less than significant impact.

As discussed in Section 6.3.2, the Project would be consistent with CARB's Scoping Plan and SCAG's RTP/SCS, which incorporate goals for use of renewable energy and efficient energy use as well as for reducing GHG emissions. The proposed Project also would not interfere with the installation of any renewable energy system. Therefore, the Project would be consistent with applicable State and local plans for promoting use of renewable energy and energy efficiency.

[8] Calculations based on a service population of 634. Approximately 611 of the service population would be residents (see Section 17.2.3) and12,500 square feet for retail would result in employment of 23 people, based on a rate of one employee per 550 square feet of retail (GBC 2008).

7 REPORT PREPARERS AND REFERENCES

This report was prepared by MIG under contract to Evergreen Investment Partners, LLC. This report reflects the independent, objective, professional opinion of MIG.

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APPENDIX A: CalEEMod Output Files

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Arroyo at Monrovia (existing conditions)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	44.24	1000sqft	1.02	44,240.00	0
Single Family Housing	8.00	Dwelling Unit	2.60	7,612.00	22

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	537.06	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia (existing conditions) - Los Angeles-South Coast County, Annual

Project Characteristics - SCE intensity factors updated for 2019

Land Use - lot acreae and sf from project description

Construction Phase - no construction modeled

Off-road Equipment - no construction modeled

Trips and VMT - no construction modeled

Grading - no construction modeled

Architectural Coating - no construction modeled

Vehicle Trips - WkDy trip rate obtained from TIA

Energy Use -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	8.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	PhaseEndDate	2/7/2019	1/10/2019
tblConstructionPhase	PhaseEndDate	2/14/2019	2/7/2019
tblConstructionPhase	PhaseEndDate	2/26/2019	2/14/2019
tblConstructionPhase	PhaseEndDate	1/14/2020	2/26/2019
tblConstructionPhase	PhaseEndDate	2/7/2020	1/14/2020

tblConstructionPhase	PhaseEndDate	3/4/2020	2/7/2020
tblLandUse	LandUseSquareFeet	14,400.00	7,612.00
tblLandUse	Population	23.00	22.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	537.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	21.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00
tblVehicleTrips	DV_TP	11.00	8.00
tblVehicleTrips	HO_TTP	40.60	40.00
tblVehicleTrips	HS_TTP	19.20	20.00
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	PB_TP	3.00	5.00
tblVehicleTrips	PR_TP	86.00	87.00
tblVehicleTrips	WD_TR	6.97	4.95

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2391	3.0400e-003	0.1343	1.3000e-004		8.1000e-003	8.1000e-003		8.1000e-003	8.1000e-003	0.8498	1.7688	2.6186	2.6700e-003	6.0000e-005	2.7025
Energy	5.5000e-003	0.0494	0.0373	3.0000e-004		3.8000e-003	3.8000e-003		3.8000e-003	3.8000e-003	0.0000	190.0830	190.0830	9.3800e-003	2.0100e-003	190.9159
Mobile	0.1068	0.5668	1.5874	4.9500e-003	0.3822	5.7600e-003	0.3879	0.1025	5.4100e-003	0.1079	0.0000	455.6075	455.6075	0.0263	0.0000	456.2645
Waste						0.0000	0.0000		0.0000	0.0000	12.9671	0.0000	12.9671	0.7663	0.0000	32.1254
Water						0.0000	0.0000		0.0000	0.0000	3.4110	34.9938	38.4049	0.3525	8.5300e-003	49.7601
Total	**0.3513**	**0.6192**	**1.7590**	**5.3800e-003**	**0.3822**	**0.0177**	**0.3998**	**0.1025**	**0.0173**	**0.1198**	**17.2278**	**682.4530**	**699.6809**	**1.1572**	**0.0106**	**731.7683**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2391	3.0400e-003	0.1343	1.3000e-004		8.1000e-003	8.1000e-003		8.1000e-003	8.1000e-003	0.8498	1.7688	2.6186	2.6700e-003	6.0000e-005	2.7025
Energy	5.5000e-003	0.0494	0.0373	3.0000e-004		3.8000e-003	3.8000e-003		3.8000e-003	3.8000e-003	0.0000	190.0830	190.0830	9.3800e-003	2.0100e-003	190.9159
Mobile	0.1068	0.5668	1.5874	4.9500e-003	0.3822	5.7600e-003	0.3879	0.1025	5.4100e-003	0.1079	0.0000	455.6075	455.6075	0.0263	0.0000	456.2645
Waste						0.0000	0.0000		0.0000	0.0000	12.9671	0.0000	12.9671	0.7663	0.0000	32.1254
Water						0.0000	0.0000		0.0000	0.0000	3.4110	34.9938	38.4049	0.3525	8.5300e-003	49.7601
Total	**0.3513**	**0.6192**	**1.7590**	**5.3800e-003**	**0.3822**	**0.0177**	**0.3998**	**0.1025**	**0.0173**	**0.1198**	**17.2278**	**682.4530**	**699.6809**	**1.1572**	**0.0106**	**731.7683**

	ROG	NOx	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

Arroyo at Monrovia (existing conditions) - Los Angeles-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/11/2019	1/10/2019	5	0	
2	Site Preparation	Site Preparation	2/8/2019	2/7/2019	5	0	
3	Grading	Grading	2/15/2019	2/14/2019	5	0	
4	Building Construction	Building Construction	2/27/2019	2/26/2019	5	0	
5	Paving	Paving	1/15/2020	1/14/2020	5	0	
6	Architectural Coating	Architectural Coating	2/8/2020	2/7/2020	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 15,414; Residential Outdoor: 5,138; Non-Residential Indoor: 66,360; Non-Residential Outdoor: 22,120; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Arroyo at Monrovia (existing conditions) - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	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	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2019

Mitigated Construction Off-Site

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

3.3 Site Preparation - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

Mitigated Construction Off-Site

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

3.4 Grading - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

Mitigated Construction Off-Site

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

3.5 Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

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

3.6 Paving - 2020

Unmitigated Construction On-Site

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

3.6 Paving - 2020

Unmitigated Construction Off-Site

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

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

Mitigated Construction Off-Site

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

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

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

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1068	0.5668	1.5874	4.9500e-003	0.3822	5.7600e-003	0.3879	0.1025	5.4100e-003	0.1079	0.0000	455.6075	455.6075	0.0263	0.0000	456.2645
Unmitigated	0.1068	0.5668	1.5874	4.9500e-003	0.3822	5.7600e-003	0.3879	0.1025	5.4100e-003	0.1079	0.0000	455.6075	455.6075	0.0263	0.0000	456.2645

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	218.99	58.40	30.08	748,645	748,645
Single Family Housing	76.16	79.28	68.96	258,199	258,199
Total	295.15	137.68	99.04	1,006,843	1,006,843

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 Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Single Family Housing	14.70	5.90	8.70	40.00	20.00	40.00	87	8	5

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Single Family Housing	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

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	135.6230	135.6230	8.3300e-003	1.0100e-003	136.1324
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	135.6230	135.6230	8.3300e-003	1.0100e-003	136.1324
NaturalGas Mitigated	5.5000e-003	0.0494	0.0373	3.0000e-004		3.8000e-003	3.8000e-003		3.8000e-003	3.8000e-003	0.0000	54.4599	54.4599	1.0400e-003	1.0000e-003	54.7836
NaturalGas Unmitigated	5.5000e-003	0.0494	0.0373	3.0000e-004		3.8000e-003	3.8000e-003		3.8000e-003	3.8000e-003	0.0000	54.4599	54.4599	1.0400e-003	1.0000e-003	54.7836

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 Light Industry	800744	4.3200e-003	0.0393	0.0330	2.4000e-004		2.9800e-003	2.9800e-003		2.9800e-003	2.9800e-003	0.0000	42.7308	42.7308	8.2000e-004	7.8000e-004	42.9847
Single Family Housing	219797	1.1900e-003	0.0101	4.3100e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7292	11.7292	2.2000e-004	2.2000e-004	11.7989
Total		**5.5100e-003**	**0.0494**	**0.0373**	**3.0000e-004**		**3.8000e-003**	**3.8000e-003**		**3.8000e-003**	**3.8000e-003**	**0.0000**	**54.4599**	**54.4599**	**1.0400e-003**	**1.0000e-003**	**54.7836**

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 Light Industry	800744	4.3200e-003	0.0393	0.0330	2.4000e-004		2.9800e-003	2.9800e-003		2.9800e-003	2.9800e-003	0.0000	42.7308	42.7308	8.2000e-004	7.8000e-004	42.9847
Single Family Housing	219797	1.1900e-003	0.0101	4.3100e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7292	11.7292	2.2000e-004	2.2000e-004	11.7989
Total		**5.5100e-003**	**0.0494**	**0.0373**	**3.0000e-004**		**3.8000e-003**	**3.8000e-003**		**3.8000e-003**	**3.8000e-003**	**0.0000**	**54.4599**	**54.4599**	**1.0400e-003**	**1.0000e-003**	**54.7836**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	491064	119.6263	7.3500e-003	8.9000e-004	120.0756
Single Family Housing	65666.3	15.9967	9.8000e-004	1.2000e-004	16.0568
Total		**135.6230**	**8.3300e-003**	**1.0100e-003**	**136.1324**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	491064	119.6263	7.3500e-003	8.9000e-004	120.0756
Single Family Housing	65666.3	15.9967	9.8000e-004	1.2000e-004	16.0568
Total		**135.6230**	**8.3300e-003**	**1.0100e-003**	**136.1324**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2391	3.0400e-003	0.1343	1.3000e-004		8.1000e-003	8.1000e-003		8.1000e-003	8.1000e-003	0.8498	1.7688	2.6186	2.6700e-003	6.0000e-005	2.7025
Unmitigated	0.2391	3.0400e-003	0.1343	1.3000e-004		8.1000e-003	8.1000e-003		8.1000e-003	8.1000e-003	0.8498	1.7688	2.6186	2.6700e-003	6.0000e-005	2.7025

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	0.0229					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0262	2.0700e-003	0.0509	1.3000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.8498	1.6329	2.4827	2.5300e-003	6.0000e-005	2.5632
Landscaping	2.5900e-003	9.7000e-004	0.0835	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1359	0.1359	1.4000e-004	0.0000	0.1392
Total	**0.2391**	**3.0400e-003**	**0.1343**	**1.3000e-004**		**8.1000e-003**	**8.1000e-003**		**8.1000e-003**	**8.1000e-003**	**0.8498**	**1.7688**	**2.6186**	**2.6700e-003**	**6.0000e-005**	**2.7025**

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	0.0229					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1874					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0262	2.0700e-003	0.0509	1.3000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.8498	1.6329	2.4827	2.5300e-003	6.0000e-005	2.5632
Landscaping	2.5900e-003	9.7000e-004	0.0835	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1359	0.1359	1.4000e-004	0.0000	0.1392
Total	**0.2391**	**3.0400e-003**	**0.1343**	**1.3000e-004**		**8.1000e-003**	**8.1000e-003**		**8.1000e-003**	**8.1000e-003**	**0.8498**	**1.7688**	**2.6186**	**2.6700e-003**	**6.0000e-005**	**2.7025**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	38.4049	0.3525	8.5300e-003	49.7601
Unmitigated	38.4049	0.3525	8.5300e-003	49.7601

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.2305 / 0	35.6968	0.3354	8.1100e-003	46.4984
Single Family Housing	0.521232 / 0.328603	2.7081	0.0171	4.2000e-004	3.2617
Total		**38.4049**	**0.3525**	**8.5300e-003**	**49.7601**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	10.2305 / 0	35.6968	0.3354	8.1100e-003	46.4984
Single Family Housing	0.521232 / 0.328603	2.7081	0.0171	4.2000e-004	3.2617
Total		**38.4049**	**0.3525**	**8.5300e-003**	**49.7601**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.9671	0.7663	0.0000	32.1254
Unmitigated	12.9671	0.7663	0.0000	32.1254

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	54.86	11.1361	0.6581	0.0000	27.5892
Single Family Housing	9.02	1.8310	0.1082	0.0000	4.5362
Total		**12.9671**	**0.7663**	**0.0000**	**32.1254**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	54.86	11.1361	0.6581	0.0000	27.5892
Single Family Housing	9.02	1.8310	0.1082	0.0000	4.5362
Total		**12.9671**	**0.7663**	**0.0000**	**32.1254**

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

Arroyo at Monrovia (existing conditions)

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	44.24	1000sqft	1.02	44,240.00	0
Single Family Housing	8.00	Dwelling Unit	2.60	7,612.00	22

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	537.06	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia (existing conditions) - Los Angeles-South Coast County, Summer

Project Characteristics - SCE intensity factors updated for 2019

Land Use - lot acreae and sf from project description

Construction Phase - no construction modeled

Off-road Equipment - no construction modeled

Trips and VMT - no construction modeled

Grading - no construction modeled

Architectural Coating - no construction modeled

Vehicle Trips - WkDy trip rate obtained from TIA

Energy Use -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	8.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	PhaseEndDate	2/7/2019	1/10/2019
tblConstructionPhase	PhaseEndDate	2/14/2019	2/7/2019
tblConstructionPhase	PhaseEndDate	2/26/2019	2/14/2019
tblConstructionPhase	PhaseEndDate	1/14/2020	2/26/2019
tblConstructionPhase	PhaseEndDate	2/7/2020	1/14/2020

tblConstructionPhase	PhaseEndDate	3/4/2020	2/7/2020
tblLandUse	LandUseSquareFeet	14,400.00	7,612.00
tblLandUse	Population	23.00	22.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	537.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	21.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00
tblVehicleTrips	DV_TP	11.00	8.00
tblVehicleTrips	HO_TTP	40.60	40.00
tblVehicleTrips	HS_TTP	19.20	20.00
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	PB_TP	3.00	5.00
tblVehicleTrips	PR_TP	86.00	87.00
tblVehicleTrips	WD_TR	6.97	4.95

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	6.8784	0.0000	0.0000	6.3727	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.7618	0.0000	0.0000	0.7115	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**6.8784**	**0.0000**	**0.0000**	**6.3727**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	6.8784	0.0000	0.0000	6.3727	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.7618	0.0000	0.0000	0.7115	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**6.8784**	**0.0000**	**0.0000**	**6.3727**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657
Energy	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961
Mobile	0.7530	3.6302	11.1817	0.0347	2.6383	0.0389	2.6772	0.7062	0.0366	0.7428		3,523.7538	3,523.7538	0.1980		3,528.7046
Total	**4.0523**	**4.0745**	**16.1223**	**0.0468**	**2.6383**	**0.6745**	**3.3128**	**0.7062**	**0.6722**	**1.3784**	**74.9354**	**3,997.8933**	**4,072.8287**	**0.4290**	**0.0111**	**4,086.8664**

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	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657
Energy	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961
Mobile	0.7530	3.6302	11.1817	0.0347	2.6383	0.0389	2.6772	0.7062	0.0366	0.7428		3,523.7538	3,523.7538	0.1980		3,528.7046
Total	**4.0523**	**4.0745**	**16.1223**	**0.0468**	**2.6383**	**0.6745**	**3.3128**	**0.7062**	**0.6722**	**1.3784**	**74.9354**	**3,997.8933**	**4,072.8287**	**0.4290**	**0.0111**	**4,086.8664**

	ROG	NOx	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	Demolition	Demolition	1/11/2019	1/10/2019	5	0	
2	Site Preparation	Site Preparation	2/8/2019	2/7/2019	5	0	
3	Grading	Grading	2/15/2019	2/14/2019	5	0	
4	Building Construction	Building Construction	2/27/2019	2/26/2019	5	0	
5	Paving	Paving	1/15/2020	1/14/2020	5	0	
6	Architectural Coating	Architectural Coating	2/8/2020	2/7/2020	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 15,414; Residential Outdoor: 5,138; Non-Residential Indoor: 66,360; Non-Residential Outdoor: 22,120; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	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	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7530	3.6302	11.1817	0.0347	2.6383	0.0389	2.6772	0.7062	0.0366	0.7428		3,523.7538	3,523.7538	0.1980		3,528.7046
Unmitigated	0.7530	3.6302	11.1817	0.0347	2.6383	0.0389	2.6772	0.7062	0.0366	0.7428		3,523.7538	3,523.7538	0.1980		3,528.7046

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	218.99	58.40	30.08	748,645	748,645
Single Family Housing	76.16	79.28	68.96	258,199	258,199
Total	295.15	137.68	99.04	1,006,843	1,006,843

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 Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Single Family Housing	14.70	5.90	8.70	40.00	20.00	40.00	87	8	5

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Single Family Housing	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

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	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961
NaturalGas Unmitigated	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961

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 Light Industry	2193.82	0.0237	0.2151	0.1807	1.2900e-003		0.0164	0.0164		0.0164	0.0164		258.0964	258.0964	4.9500e-003	4.7300e-003	259.6301
Single Family Housing	602.183	6.4900e-003	0.0555	0.0236	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003		70.8450	70.8450	1.3600e-003	1.3000e-003	71.2660
Total		**0.0302**	**0.2706**	**0.2043**	**1.6400e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**		**328.9414**	**328.9414**	**6.3100e-003**	**6.0300e-003**	**330.8961**

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 Light Industry	2.19382	0.0237	0.2151	0.1807	1.2900e-003		0.0164	0.0164		0.0164	0.0164		258.0964	258.0964	4.9500e-003	4.7300e-003	259.6301
Single Family Housing	0.602183	6.4900e-003	0.0555	0.0236	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003		70.8450	70.8450	1.3600e-003	1.3000e-003	71.2660
Total		**0.0302**	**0.2706**	**0.2043**	**1.6400e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**		**328.9414**	**328.9414**	**6.3100e-003**	**6.0300e-003**	**330.8961**

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	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657
Unmitigated	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.0963	0.1660	4.0684	0.0104		0.6111	0.6111		0.6111	0.6111	74.9354	144.0000	218.9354	0.2235	5.0900e-003	226.0378
Landscaping	0.0207	7.7200e-003	0.6678	4.0000e-005		3.6500e-003	3.6500e-003		3.6500e-003	3.6500e-003		1.1981	1.1981	1.1900e-003		1.2279
Total	**3.2691**	**0.1737**	**4.7363**	**0.0104**		**0.6148**	**0.6148**		**0.6148**	**0.6148**	**74.9354**	**145.1981**	**220.1335**	**0.2247**	**5.0900e-003**	**227.2657**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.0963	0.1660	4.0684	0.0104		0.6111	0.6111		0.6111	0.6111	74.9354	144.0000	218.9354	0.2235	5.0900e-003	226.0378
Landscaping	0.0207	7.7200e-003	0.6678	4.0000e-005		3.6500e-003	3.6500e-003		3.6500e-003	3.6500e-003		1.1981	1.1981	1.1900e-003		1.2279
Total	**3.2691**	**0.1737**	**4.7363**	**0.0104**		**0.6148**	**0.6148**		**0.6148**	**0.6148**	**74.9354**	**145.1981**	**220.1335**	**0.2247**	**5.0900e-003**	**227.2657**

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

Arroyo at Monrovia (existing conditions)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	44.24	1000sqft	1.02	44,240.00	0
Single Family Housing	8.00	Dwelling Unit	2.60	7,612.00	22

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	537.06	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia (existing conditions) - Los Angeles-South Coast County, Winter

Project Characteristics - SCE intensity factors updated for 2019

Land Use - lot acreae and sf from project description

Construction Phase - no construction modeled

Off-road Equipment - no construction modeled

Trips and VMT - no construction modeled

Grading - no construction modeled

Architectural Coating - no construction modeled

Vehicle Trips - WkDy trip rate obtained from TIA

Energy Use -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	5.00	0.00
tblConstructionPhase	NumDays	8.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblConstructionPhase	PhaseEndDate	2/7/2019	1/10/2019
tblConstructionPhase	PhaseEndDate	2/14/2019	2/7/2019
tblConstructionPhase	PhaseEndDate	2/26/2019	2/14/2019
tblConstructionPhase	PhaseEndDate	1/14/2020	2/26/2019
tblConstructionPhase	PhaseEndDate	2/7/2020	1/14/2020

tblConstructionPhase	PhaseEndDate	3/4/2020	2/7/2020
tblLandUse	LandUseSquareFeet	14,400.00	7,612.00
tblLandUse	Population	23.00	22.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	537.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	21.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00
tblVehicleTrips	DV_TP	11.00	8.00
tblVehicleTrips	HO_TTP	40.60	40.00
tblVehicleTrips	HS_TTP	19.20	20.00
tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	PB_TP	3.00	5.00
tblVehicleTrips	PR_TP	86.00	87.00
tblVehicleTrips	WD_TR	6.97	4.95

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	6.8785	0.0000	0.0000	6.3728	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.7618	0.0000	0.0000	0.7115	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**6.8785**	**0.0000**	**0.0000**	**6.3728**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2019	0.0000	0.0000	0.0000	0.0000	0.0000	6.8785	0.0000	0.0000	6.3728	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.7618	0.0000	0.0000	0.7115	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**6.8785**	**0.0000**	**0.0000**	**6.3728**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657
Energy	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961
Mobile	0.7342	3.7527	10.5602	0.0330	2.6383	0.0391	2.6774	0.7062	0.0368	0.7430		3,352.8575	3,352.8575	0.1961		3,357.7596
Total	**4.0334**	**4.1970**	**15.5008**	**0.0451**	**2.6383**	**0.6747**	**3.3130**	**0.7062**	**0.6724**	**1.3786**	**74.9354**	**3,826.9970**	**3,901.9324**	**0.4270**	**0.0111**	**3,915.9215**

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	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657
Energy	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961
Mobile	0.7342	3.7527	10.5602	0.0330	2.6383	0.0391	2.6774	0.7062	0.0368	0.7430		3,352.8575	3,352.8575	0.1961		3,357.7596
Total	**4.0334**	**4.1970**	**15.5008**	**0.0451**	**2.6383**	**0.6747**	**3.3130**	**0.7062**	**0.6724**	**1.3786**	**74.9354**	**3,826.9970**	**3,901.9324**	**0.4270**	**0.0111**	**3,915.9215**

	ROG	NOx	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	Demolition	Demolition	1/11/2019	1/10/2019	5	0	
2	Site Preparation	Site Preparation	2/8/2019	2/7/2019	5	0	
3	Grading	Grading	2/15/2019	2/14/2019	5	0	
4	Building Construction	Building Construction	2/27/2019	2/26/2019	5	0	
5	Paving	Paving	1/15/2020	1/14/2020	5	0	
6	Architectural Coating	Architectural Coating	2/8/2020	2/7/2020	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 15,414; Residential Outdoor: 5,138; Non-Residential Indoor: 66,360; Non-Residential Outdoor: 22,120; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	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	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2019

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2020

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	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7342	3.7527	10.5602	0.0330	2.6383	0.0391	2.6774	0.7062	0.0368	0.7430		3,352.8575	3,352.8575	0.1961		3,357.7596
Unmitigated	0.7342	3.7527	10.5602	0.0330	2.6383	0.0391	2.6774	0.7062	0.0368	0.7430		3,352.8575	3,352.8575	0.1961		3,357.7596

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	218.99	58.40	30.08	748,645	748,645
Single Family Housing	76.16	79.28	68.96	258,199	258,199
Total	295.15	137.68	99.04	1,006,843	1,006,843

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 Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Single Family Housing	14.70	5.90	8.70	40.00	20.00	40.00	87	8	5

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Single Family Housing	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

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	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961
NaturalGas Unmitigated	0.0302	0.2706	0.2043	1.6400e-003		0.0208	0.0208		0.0208	0.0208		328.9414	328.9414	6.3000e-003	6.0300e-003	330.8961

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 Light Industry	2193.82	0.0237	0.2151	0.1807	1.2900e-003		0.0164	0.0164		0.0164	0.0164		258.0964	258.0964	4.9500e-003	4.7300e-003	259.6301
Single Family Housing	602.183	6.4900e-003	0.0555	0.0236	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003		70.8450	70.8450	1.3600e-003	1.3000e-003	71.2660
Total		**0.0302**	**0.2706**	**0.2043**	**1.6400e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**		**328.9414**	**328.9414**	**6.3100e-003**	**6.0300e-003**	**330.8961**

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 Light Industry	2.19382	0.0237	0.2151	0.1807	1.2900e-003		0.0164	0.0164		0.0164	0.0164		258.0964	258.0964	4.9500e-003	4.7300e-003	259.6301
Single Family Housing	0.602183	6.4900e-003	0.0555	0.0236	3.5000e-004		4.4900e-003	4.4900e-003		4.4900e-003	4.4900e-003		70.8450	70.8450	1.3600e-003	1.3000e-003	71.2660
Total		**0.0302**	**0.2706**	**0.2043**	**1.6400e-003**		**0.0208**	**0.0208**		**0.0208**	**0.0208**		**328.9414**	**328.9414**	**6.3100e-003**	**6.0300e-003**	**330.8961**

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	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657
Unmitigated	3.2691	0.1737	4.7363	0.0104		0.6148	0.6148		0.6148	0.6148	74.9354	145.1981	220.1335	0.2247	5.0900e-003	227.2657

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.0963	0.1660	4.0684	0.0104		0.6111	0.6111		0.6111	0.6111	74.9354	144.0000	218.9354	0.2235	5.0900e-003	226.0378
Landscaping	0.0207	7.7200e-003	0.6678	4.0000e-005		3.6500e-003	3.6500e-003		3.6500e-003	3.6500e-003		1.1981	1.1981	1.1900e-003		1.2279
Total	**3.2691**	**0.1737**	**4.7363**	**0.0104**		**0.6148**	**0.6148**		**0.6148**	**0.6148**	**74.9354**	**145.1981**	**220.1335**	**0.2247**	**5.0900e-003**	**227.2657**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0267					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.0963	0.1660	4.0684	0.0104		0.6111	0.6111		0.6111	0.6111	74.9354	144.0000	218.9354	0.2235	5.0900e-003	226.0378
Landscaping	0.0207	7.7200e-003	0.6678	4.0000e-005		3.6500e-003	3.6500e-003		3.6500e-003	3.6500e-003		1.1981	1.1981	1.1900e-003		1.2279
Total	**3.2691**	**0.1737**	**4.7363**	**0.0104**		**0.6148**	**0.6148**		**0.6148**	**0.6148**	**74.9354**	**145.1981**	**220.1335**	**0.2247**	**5.0900e-003**	**227.2657**

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

Arroyo at Monrovia Station

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	141.22	1000sqft	0.54	166,720.00	0
Other Asphalt Surfaces	23.28	1000sqft	0.53	23,280.00	0
Other Non-Asphalt Surfaces	12.86	1000sqft	0.30	12,860.00	0
Apartments Mid Rise	302.00	Dwelling Unit	1.53	329,955.00	603
Regional Shopping Center	7.08	1000sqft	0.00	7,080.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	427.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 and CH4 intensity updated for 2022

Land Use - lot acreage and SF from site plan and project description
Retail footrpint added to residenital footprint

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - Trip rates obtained from the TIS

Woodstoves - SCAQMD Rule 445

Consumer Products -

Area Coating - SCAQMD Rule 1113

Energy Use - Reduce commercial lighting by 30% per 2019 Cal Green

Solid Waste - Apply 75% waste diversion rate per AB341

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Mobile Land Use Mitigation -

Fleet Mix - No trips associated with HHD; OBUS; UBUS; SBUS; MH. These trips re allocated to LDA

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	55
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	55
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.10	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00

tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblGrading	MaterialExported	0.00	3,430.00
tblLandUse	LandUseSquareFeet	141,220.00	166,720.00

tblLandUse	LandUseSquareFeet	302,000.00	329,955.00
tblLandUse	LotAcreage	3.24	0.54
tblLandUse	LotAcreage	7.95	1.53
tblLandUse	LotAcreage	0.16	0.00
tblLandUse	Population	864.00	603.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	427.1
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	138.92	34.73
tblSolidWaste	SolidWasteGenerationRate	7.43	1.86
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	6.39	3.92
tblVehicleTrips	ST_TR	49.97	28.09
tblVehicleTrips	SU_TR	5.86	3.59
tblVehicleTrips	SU_TR	25.24	14.19
tblVehicleTrips	WD_TR	6.65	4.08
tblVehicleTrips	WD_TR	42.70	24.01
tblWoodstoves	NumberCatalytic	15.10	0.00
tblWoodstoves	NumberNoncatalytic	15.10	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1164	0.9496	0.8051	2.0600e-003	0.1225	0.0394	0.1619	0.0346	0.0372	0.0718	0.0000	186.3557	186.3557	0.0223	0.0000	186.9124
2020	1.4632	2.4312	2.7755	7.1600e-003	0.3486	0.0963	0.4449	0.0935	0.0921	0.1856	0.0000	640.2364	640.2364	0.0599	0.0000	641.7338
Maximum	**1.4632**	**2.4312**	**2.7755**	**7.1600e-003**	**0.3486**	**0.0963**	**0.4449**	**0.0935**	**0.0921**	**0.1856**	**0.0000**	**640.2364**	**640.2364**	**0.0599**	**0.0000**	**641.7338**

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					
2019	0.1164	0.9496	0.8051	2.0600e-003	0.0944	0.0394	0.1338	0.0260	0.0372	0.0632	0.0000	186.3556	186.3556	0.0223	0.0000	186.9123
2020	1.4632	2.4312	2.7755	7.1600e-003	0.3486	0.0963	0.4449	0.0935	0.0921	0.1856	0.0000	640.2361	640.2361	0.0599	0.0000	641.7336
Maximum	**1.4632**	**2.4312**	**2.7755**	**7.1600e-003**	**0.3486**	**0.0963**	**0.4449**	**0.0935**	**0.0921**	**0.1856**	**0.0000**	**640.2361**	**640.2361**	**0.0599**	**0.0000**	**641.7336**

	ROG	NOx	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**	**5.95**	**0.00**	**4.62**	**6.70**	**0.00**	**3.34**	**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	10-1-2019	12-31-2019	1.0609	1.0609
2	1-1-2020	3-31-2020	0.9672	0.9672
3	4-1-2020	6-30-2020	0.9584	0.9584
4	7-1-2020	9-30-2020	1.2286	1.2286
		Highest	1.2286	1.2286

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	1.4409	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245
Energy	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	661.1399	661.1399	0.0385	8.1300e-003	664.5263
Mobile	0.3781	0.7703	5.3685	0.0177	1.6783	0.0134	1.6917	0.4477	0.0124	0.4601	0.0000	1,608.1925	1,608.1925	0.0492	0.0000	1,609.4227
Stationary	7.4000e-004	2.4100e-003	2.6800e-003	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.3427	0.3427	5.0000e-005	0.0000	0.3439
Waste						0.0000	0.0000		0.0000	0.0000	7.4274	0.0000	7.4274	0.4390	0.0000	18.4012
Water						0.0000	0.0000		0.0000	0.0000	6.4088	78.3489	84.7577	0.6643	0.0163	106.2156
Total	**1.8417**	**1.0489**	**8.5937**	**0.0194**	**1.6783**	**0.0502**	**1.7285**	**0.4477**	**0.0492**	**0.4969**	**13.8363**	**2,414.7591**	**2,428.5954**	**1.1971**	**0.0255**	**2,466.1342**

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	1.4409	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245
Energy	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	661.1399	661.1399	0.0385	8.1300e-003	664.5263
Mobile	0.3781	0.7703	5.3685	0.0177	1.6783	0.0134	1.6917	0.4477	0.0124	0.4601	0.0000	1,608.1925	1,608.1925	0.0492	0.0000	1,609.4227
Stationary	7.4000e-004	2.4100e-003	2.6800e-003	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.3427	0.3427	5.0000e-005	0.0000	0.3439
Waste						0.0000	0.0000		0.0000	0.0000	7.4274	0.0000	7.4274	0.4390	0.0000	18.4012
Water						0.0000	0.0000		0.0000	0.0000	6.4088	78.3489	84.7577	0.6643	0.0163	106.2156
Total	**1.8417**	**1.0489**	**8.5937**	**0.0194**	**1.6783**	**0.0502**	**1.7285**	**0.4477**	**0.0492**	**0.4969**	**13.8363**	**2,414.7591**	**2,428.5954**	**1.1971**	**0.0255**	**2,466.1342**

	ROG	NOx	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	Demolition	Demolition	10/1/2019	10/28/2019	5	20	
2	Site Preparation	Site Preparation	10/29/2019	10/31/2019	5	3	
3	Grading	Grading	11/1/2019	11/8/2019	5	6	
4	Building Construction	Building Construction	11/9/2019	9/11/2020	5	220	
5	Paving	Paving	9/12/2020	9/25/2020	5	10	
6	Architectural Coating	Architectural Coating	9/26/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

Residential Indoor: 668,159; Residential Outdoor: 222,720; Non-Residential Indoor: 10,620; Non-Residential Outdoor: 3,540; Striped Parking Area: 12,172 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	214.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	429.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	305.00	67.00	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	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2019

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					0.0232	0.0000	0.0232	3.5100e-003	0.0000	3.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0230	0.2268	0.1489	2.4000e-004		0.0129	0.0129		0.0120	0.0120	0.0000	21.4161	21.4161	5.4500e-003	0.0000	21.5524
Total	**0.0230**	**0.2268**	**0.1489**	**2.4000e-004**	**0.0232**	**0.0129**	**0.0361**	**3.5100e-003**	**0.0120**	**0.0155**	**0.0000**	**21.4161**	**21.4161**	**5.4500e-003**	**0.0000**	**21.5524**

3.2 Demolition - 2019

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	1.0200e-003	0.0339	7.1900e-003	8.0000e-005	1.8400e-003	1.2000e-004	1.9600e-003	5.0000e-004	1.2000e-004	6.2000e-004	0.0000	8.3319	8.3319	5.9000e-004	0.0000	8.3466
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	6.5000e-004	5.4000e-004	5.9000e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3694	1.3694	5.0000e-005	0.0000	1.3705
Total	**1.6700e-003**	**0.0344**	**0.0131**	**1.0000e-004**	**3.2600e-003**	**1.3000e-004**	**3.4000e-003**	**8.8000e-004**	**1.3000e-004**	**1.0100e-003**	**0.0000**	**9.7013**	**9.7013**	**6.4000e-004**	**0.0000**	**9.7172**

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					8.8700e-003	0.0000	8.8700e-003	1.3400e-003	0.0000	1.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0230	0.2268	0.1489	2.4000e-004		0.0129	0.0129		0.0120	0.0120	0.0000	21.4161	21.4161	5.4500e-003	0.0000	21.5524
Total	**0.0230**	**0.2268**	**0.1489**	**2.4000e-004**	**8.8700e-003**	**0.0129**	**0.0217**	**1.3400e-003**	**0.0120**	**0.0134**	**0.0000**	**21.4161**	**21.4161**	**5.4500e-003**	**0.0000**	**21.5524**

3.2 Demolition - 2019

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	1.0200e-003	0.0339	7.1900e-003	8.0000e-005	1.8400e-003	1.2000e-004	1.9600e-003	5.0000e-004	1.2000e-004	6.2000e-004	0.0000	8.3319	8.3319	5.9000e-004	0.0000	8.3466
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	6.5000e-004	5.4000e-004	5.9000e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3694	1.3694	5.0000e-005	0.0000	1.3705
Total	**1.6700e-003**	**0.0344**	**0.0131**	**1.0000e-004**	**3.2600e-003**	**1.3000e-004**	**3.4000e-003**	**8.8000e-004**	**1.3000e-004**	**1.0100e-003**	**0.0000**	**9.7013**	**9.7013**	**6.4000e-004**	**0.0000**	**9.7172**

3.3 Site Preparation - 2019

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	**2.6300e-003**	**0.0323**	**0.0179**	**4.0000e-005**	**2.3900e-003**	**1.2800e-003**	**3.6700e-003**	**2.6000e-004**	**1.1800e-003**	**1.4400e-003**	**0.0000**	**3.3020**	**3.3020**	**1.0400e-003**	**0.0000**	**3.3281**

3.3 Site Preparation - 2019

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	6.0000e-005	5.0000e-005	5.4000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265
Total	**6.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.0000**	**0.1265**

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					9.1000e-004	0.0000	9.1000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	**2.6300e-003**	**0.0323**	**0.0179**	**4.0000e-005**	**9.1000e-004**	**1.2800e-003**	**2.1900e-003**	**1.0000e-004**	**1.1800e-003**	**1.2800e-003**	**0.0000**	**3.3020**	**3.3020**	**1.0400e-003**	**0.0000**	**3.3281**

3.3 Site Preparation - 2019

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	6.0000e-005	5.0000e-005	5.4000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265
Total	**6.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.0000**	**0.1265**

3.4 Grading - 2019

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					0.0199	0.0000	0.0199	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	**6.0900e-003**	**0.0682**	**0.0305**	**6.0000e-005**	**0.0199**	**3.2200e-003**	**0.0231**	**0.0101**	**2.9600e-003**	**0.0131**	**0.0000**	**5.5554**	**5.5554**	**1.7600e-003**	**0.0000**	**5.5993**

3.4 Grading - 2019

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	2.0400e-003	0.0679	0.0144	1.7000e-004	3.6900e-003	2.4000e-004	3.9300e-003	1.0100e-003	2.3000e-004	1.2400e-003	0.0000	16.7028	16.7028	1.1800e-003	0.0000	16.7323
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	1.5000e-004	1.3000e-004	1.3600e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3160	0.3160	1.0000e-005	0.0000	0.3163
Total	**2.1900e-003**	**0.0680**	**0.0158**	**1.7000e-004**	**4.0200e-003**	**2.4000e-004**	**4.2600e-003**	**1.1000e-003**	**2.3000e-004**	**1.3300e-003**	**0.0000**	**17.0188**	**17.0188**	**1.1900e-003**	**0.0000**	**17.0485**

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					7.5900e-003	0.0000	7.5900e-003	3.8800e-003	0.0000	3.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	**6.0900e-003**	**0.0682**	**0.0305**	**6.0000e-005**	**7.5900e-003**	**3.2200e-003**	**0.0108**	**3.8800e-003**	**2.9600e-003**	**6.8400e-003**	**0.0000**	**5.5554**	**5.5554**	**1.7600e-003**	**0.0000**	**5.5993**

3.4 Grading - 2019

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	2.0400e-003	0.0679	0.0144	1.7000e-004	3.6900e-003	2.4000e-004	3.9300e-003	1.0100e-003	2.3000e-004	1.2400e-003	0.0000	16.7028	16.7028	1.1800e-003	0.0000	16.7323
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	1.5000e-004	1.3000e-004	1.3600e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3160	0.3160	1.0000e-005	0.0000	0.3163
Total	**2.1900e-003**	**0.0680**	**0.0158**	**1.7000e-004**	**4.0200e-003**	**2.4000e-004**	**4.2600e-003**	**1.1000e-003**	**2.3000e-004**	**1.3300e-003**	**0.0000**	**17.0188**	**17.0188**	**1.1900e-003**	**0.0000**	**17.0485**

3.5 Building Construction - 2019

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	0.0473	0.3498	0.2822	4.6000e-004		0.0202	0.0202		0.0193	0.0193	0.0000	38.8046	38.8046	8.0700e-003	0.0000	39.0064
Total	**0.0473**	**0.3498**	**0.2822**	**4.6000e-004**		**0.0202**	**0.0202**		**0.0193**	**0.0193**	**0.0000**	**38.8046**	**38.8046**	**8.0700e-003**	**0.0000**	**39.0064**

3.5 Building Construction - 2019

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	5.2500e-003	0.1464	0.0400	3.2000e-004	7.8100e-003	9.2000e-004	8.7300e-003	2.2500e-003	8.8000e-004	3.1300e-003	0.0000	30.9955	30.9955	2.0700e-003	0.0000	31.0472
Worker	0.0283	0.0236	0.2562	6.6000e-004	0.0618	5.4000e-004	0.0624	0.0164	5.0000e-004	0.0169	0.0000	59.4357	59.4357	2.0400e-003	0.0000	59.4868
Total	**0.0335**	**0.1700**	**0.2962**	**9.8000e-004**	**0.0696**	**1.4600e-003**	**0.0711**	**0.0187**	**1.3800e-003**	**0.0201**	**0.0000**	**90.4312**	**90.4312**	**4.1100e-003**	**0.0000**	**90.5340**

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	0.0473	0.3498	0.2822	4.6000e-004		0.0202	0.0202		0.0193	0.0193	0.0000	38.8045	38.8045	8.0700e-003	0.0000	39.0063
Total	**0.0473**	**0.3498**	**0.2822**	**4.6000e-004**		**0.0202**	**0.0202**		**0.0193**	**0.0193**	**0.0000**	**38.8045**	**38.8045**	**8.0700e-003**	**0.0000**	**39.0063**

3.5 Building Construction - 2019

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	5.2500e-003	0.1464	0.0400	3.2000e-004	7.8100e-003	9.2000e-004	8.7300e-003	2.2500e-003	8.8000e-004	3.1300e-003	0.0000	30.9955	30.9955	2.0700e-003	0.0000	31.0472
Worker	0.0283	0.0236	0.2562	6.6000e-004	0.0618	5.4000e-004	0.0624	0.0164	5.0000e-004	0.0169	0.0000	59.4357	59.4357	2.0400e-003	0.0000	59.4868
Total	**0.0335**	**0.1700**	**0.2962**	**9.8000e-004**	**0.0696**	**1.4600e-003**	**0.0711**	**0.0187**	**1.3800e-003**	**0.0201**	**0.0000**	**90.4312**	**90.4312**	**4.1100e-003**	**0.0000**	**90.5340**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2093	1.5952	1.3631	2.2900e-003		0.0868	0.0868		0.0832	0.0832	0.0000	189.9946	189.9946	0.0386	0.0000	190.9587
Total	**0.2093**	**1.5952**	**1.3631**	**2.2900e-003**		**0.0868**	**0.0868**		**0.0832**	**0.0832**	**0.0000**	**189.9946**	**189.9946**	**0.0386**	**0.0000**	**190.9587**

3.5 Building Construction - 2020

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	0.0222	0.6643	0.1798	1.5700e-003	0.0386	3.0900e-003	0.0417	0.0111	2.9600e-003	0.0141	0.0000	152.2977	152.2977	9.6800e-003	0.0000	152.5396
Worker	0.1288	0.1039	1.1488	3.1500e-003	0.3058	2.6100e-003	0.3084	0.0812	2.4000e-003	0.0836	0.0000	285.0334	285.0334	8.9800e-003	0.0000	285.2580
Total	**0.1511**	**0.7682**	**1.3286**	**4.7200e-003**	**0.3444**	**5.7000e-003**	**0.3501**	**0.0924**	**5.3600e-003**	**0.0977**	**0.0000**	**437.3311**	**437.3311**	**0.0187**	**0.0000**	**437.7976**

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	0.2093	1.5952	1.3631	2.2900e-003		0.0868	0.0868		0.0832	0.0832	0.0000	189.9944	189.9944	0.0386	0.0000	190.9584
Total	**0.2093**	**1.5952**	**1.3631**	**2.2900e-003**		**0.0868**	**0.0868**		**0.0832**	**0.0832**	**0.0000**	**189.9944**	**189.9944**	**0.0386**	**0.0000**	**190.9584**

3.5 Building Construction - 2020

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	0.0222	0.6643	0.1798	1.5700e-003	0.0386	3.0900e-003	0.0417	0.0111	2.9600e-003	0.0141	0.0000	152.2977	152.2977	9.6800e-003	0.0000	152.5396
Worker	0.1288	0.1039	1.1488	3.1500e-003	0.3058	2.6100e-003	0.3084	0.0812	2.4000e-003	0.0836	0.0000	285.0334	285.0334	8.9800e-003	0.0000	285.2580
Total	**0.1511**	**0.7682**	**1.3286**	**4.7200e-003**	**0.3444**	**5.7000e-003**	**0.3501**	**0.0924**	**5.3600e-003**	**0.0977**	**0.0000**	**437.3311**	**437.3311**	**0.0187**	**0.0000**	**437.7976**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	6.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666
Total	**3.5000e-004**	**2.8000e-004**	**3.0900e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7660**	**0.7660**	**2.0000e-005**	**0.0000**	**0.7666**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	6.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666
Total	**3.5000e-004**	**2.8000e-004**	**3.0900e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7660**	**0.7660**	**2.0000e-005**	**0.0000**	**0.7666**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**1.0945**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

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	1.4100e-003	1.1400e-003	0.0126	3.0000e-005	3.3400e-003	3.0000e-005	3.3700e-003	8.9000e-004	3.0000e-005	9.1000e-004	0.0000	3.1151	3.1151	1.0000e-004	0.0000	3.1176
Total	**1.4100e-003**	**1.1400e-003**	**0.0126**	**3.0000e-005**	**3.3400e-003**	**3.0000e-005**	**3.3700e-003**	**8.9000e-004**	**3.0000e-005**	**9.1000e-004**	**0.0000**	**3.1151**	**3.1151**	**1.0000e-004**	**0.0000**	**3.1176**

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	1.0933					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**1.0945**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

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	1.4100e-003	1.1400e-003	0.0126	3.0000e-005	3.3400e-003	3.0000e-005	3.3700e-003	8.9000e-004	3.0000e-005	9.1000e-004	0.0000	3.1151	3.1151	1.0000e-004	0.0000	3.1176
Total	**1.4100e-003**	**1.1400e-003**	**0.0126**	**3.0000e-005**	**3.3400e-003**	**3.0000e-005**	**3.3700e-003**	**8.9000e-004**	**3.0000e-005**	**9.1000e-004**	**0.0000**	**3.1151**	**3.1151**	**1.0000e-004**	**0.0000**	**3.1176**

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	0.3781	0.7703	5.3685	0.0177	1.6783	0.0134	1.6917	0.4477	0.0124	0.4601	0.0000	1,608.1925	1,608.1925	0.0492	0.0000	1,609.4227
Unmitigated	0.3781	0.7703	5.3685	0.0177	1.6783	0.0134	1.6917	0.4477	0.0124	0.4601	0.0000	1,608.1925	1,608.1925	0.0492	0.0000	1,609.4227

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,232.16	1,183.84	1084.18	4,114,651	4,114,651
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	169.99	198.88	100.47	355,107	355,107
Total	1,402.15	1,382.72	1,184.65	4,469,758	4,469,758

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
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Enclosed Parking with Elevator	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Non-Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Regional Shopping Center	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	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	444.6294	444.6294	0.0344	4.1600e-003	446.7292
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	444.6294	444.6294	0.0344	4.1600e-003	446.7292
NaturalGas Mitigated	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.5106	216.5106	4.1500e-003	3.9700e-003	217.7972
NaturalGas Unmitigated	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.5106	216.5106	4.1500e-003	3.9700e-003	217.7972

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					
Apartments Mid Rise	4.04564e+006	0.0218	0.1864	0.0793	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8909	215.8909	4.1400e-003	3.9600e-003	217.1739
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	11611.2	6.0000e-005	5.7000e-004	4.8000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6196	0.6196	1.0000e-005	1.0000e-005	0.6233
Total		**0.0219**	**0.1870**	**0.0798**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**	**0.0000**	**216.5106**	**216.5106**	**4.1500e-003**	**3.9700e-003**	**217.7972**

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					
Apartments Mid Rise	4.04564e+006	0.0218	0.1864	0.0793	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8909	215.8909	4.1400e-003	3.9600e-003	217.1739
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	11611.2	6.0000e-005	5.7000e-004	4.8000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6196	0.6196	1.0000e-005	1.0000e-005	0.6233
Total		**0.0219**	**0.1870**	**0.0798**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**	**0.0000**	**216.5106**	**216.5106**	**4.1500e-003**	**3.9700e-003**	**217.7972**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.22255e+006	236.8432	0.0183	2.2200e-003	237.9618
Enclosed Parking with Elevator	976979	189.2695	0.0146	1.7700e-003	190.1633
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	95580	18.5167	1.4300e-003	1.7000e-004	18.6041
Total		**444.6294**	**0.0344**	**4.1600e-003**	**446.7292**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.22255e+006	236.8432	0.0183	2.2200e-003	237.9618
Enclosed Parking with Elevator	976979	189.2695	0.0146	1.7700e-003	190.1633
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	95580	18.5167	1.4300e-003	1.7000e-004	18.6041
Total		**444.6294**	**0.0344**	**4.1600e-003**	**446.7292**

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	1.4409	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245
Unmitigated	1.4409	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245

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	0.1093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.2300e-003	0.0532	0.0227	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6432	61.6432	1.1800e-003	1.1300e-003	62.0095
Landscaping	0.0944	0.0360	3.1201	1.6000e-004		0.0172	0.0172		0.0172	0.0172	0.0000	5.0919	5.0919	4.9200e-003	0.0000	5.2149
Total	**1.4409**	**0.0892**	**3.1428**	**5.0000e-004**		**0.0215**	**0.0215**		**0.0215**	**0.0215**	**0.0000**	**66.7351**	**66.7351**	**6.1000e-003**	**1.1300e-003**	**67.2245**

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	0.1093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.2300e-003	0.0532	0.0227	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6432	61.6432	1.1800e-003	1.1300e-003	62.0095
Landscaping	0.0944	0.0360	3.1201	1.6000e-004		0.0172	0.0172		0.0172	0.0172	0.0000	5.0919	5.0919	4.9200e-003	0.0000	5.2149
Total	**1.4409**	**0.0892**	**3.1428**	**5.0000e-004**		**0.0215**	**0.0215**		**0.0215**	**0.0215**	**0.0000**	**66.7351**	**66.7351**	**6.1000e-003**	**1.1300e-003**	**67.2245**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	84.7577	0.6643	0.0163	106.2156
Unmitigated	84.7577	0.6643	0.0163	106.2156

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.6765 / 12.4048	82.5766	0.6471	0.0159	103.4776
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.524433 / 0.321427	2.1811	0.0172	4.2000e-004	2.7381
Total		**84.7577**	**0.6643**	**0.0163**	**106.2156**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.6765 / 12.4048	82.5766	0.6471	0.0159	103.4776
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.524433 / 0.321427	2.1811	0.0172	4.2000e-004	2.7381
Total		**84.7577**	**0.6643**	**0.0163**	**106.2156**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.4274	0.4390	0.0000	18.4012
Unmitigated	7.4274	0.4390	0.0000	18.4012

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	34.73	7.0499	0.4166	0.0000	17.4658
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.86	0.3776	0.0223	0.0000	0.9354
Total		**7.4274**	**0.4390**	**0.0000**	**18.4012**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	34.73	7.0499	0.4166	0.0000	17.4658
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.86	0.3776	0.0223	0.0000	0.9354
Total		**7.4274**	**0.4390**	**0.0000**	**18.4012**

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
Emergency Generator	1	0	12	50	0.73	Diesel
Fire Pump	1	0	6	50	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (50 - 75 HP)	4.9000e-004	1.6100e-003	1.7900e-003	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2285	0.2285	3.0000e-005	0.0000	0.2293
Fire Pump - Diesel (50 - 75 HP)	2.5000e-004	8.0000e-004	8.9000e-004	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.1142	0.1142	2.0000e-005	0.0000	0.1146
Total	**7.4000e-004**	**2.4100e-003**	**2.6800e-003**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.3427**	**0.3427**	**5.0000e-005**	**0.0000**	**0.3439**

11.0 Vegetation

Arroyo at Monrovia Station

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	141.22	1000sqft	0.54	166,720.00	0
Other Asphalt Surfaces	23.28	1000sqft	0.53	23,280.00	0
Other Non-Asphalt Surfaces	12.86	1000sqft	0.30	12,860.00	0
Apartments Mid Rise	302.00	Dwelling Unit	1.53	329,955.00	603
Regional Shopping Center	7.08	1000sqft	0.00	7,080.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	427.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia Station - Los Angeles-South Coast County, Summer

Project Characteristics - CO2 and CH4 intensity updated for 2022

Land Use - lot acreage and SF from site plan and project description
Retail footrpint added to residenital footprint

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - Trip rates obtained from the TIS

Woodstoves - SCAQMD Rule 445

Consumer Products -

Area Coating - SCAQMD Rule 1113

Energy Use - Reduce commercial lighting by 30% per 2019 Cal Green

Solid Waste - Apply 75% waste diversion rate per AB341

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Mobile Land Use Mitigation -

Fleet Mix - No trips associated with HHD; OBUS; UBUS; SBUS; MH. These trips re allocated to LDA

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	55
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	55
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.10	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00

tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblGrading	MaterialExported	0.00	3,430.00
tblLandUse	LandUseSquareFeet	141,220.00	166,720.00

tblLandUse	LandUseSquareFeet	302,000.00	329,955.00
tblLandUse	LotAcreage	3.24	0.54
tblLandUse	LotAcreage	7.95	1.53
tblLandUse	LotAcreage	0.16	0.00
tblLandUse	Population	864.00	603.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	427.1
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	138.92	34.73
tblSolidWaste	SolidWasteGenerationRate	7.43	1.86
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	6.39	3.92
tblVehicleTrips	ST_TR	49.97	28.09
tblVehicleTrips	SU_TR	5.86	3.59
tblVehicleTrips	SU_TR	25.24	14.19
tblVehicleTrips	WD_TR	6.65	4.08
tblVehicleTrips	WD_TR	42.70	24.01
tblWoodstoves	NumberCatalytic	15.10	0.00
tblWoodstoves	NumberNoncatalytic	15.10	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.3601	44.6804	32.0179	0.0797	7.9789	1.2996	9.1332	3.7496	1.2144	4.8145	0.0000	8,343.8082	8,343.8082	1.0757	0.0000	8,370.7006
2020	219.1890	25.5591	30.1188	0.0784	3.8381	1.0102	4.8483	1.0276	0.9672	1.9949	0.0000	7,732.0974	7,732.0974	0.6909	0.0000	7,749.3701
Maximum	**219.1890**	**44.6804**	**32.0179**	**0.0797**	**7.9789**	**1.2996**	**9.1332**	**3.7496**	**1.2144**	**4.8145**	**0.0000**	**8,343.8082**	**8,343.8082**	**1.0757**	**0.0000**	**8,370.7006**

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					
2019	4.3601	44.6804	32.0179	0.0797	3.8929	1.2996	5.0472	1.6641	1.2144	2.7290	0.0000	8,343.8082	8,343.8082	1.0757	0.0000	8,370.7006
2020	219.1890	25.5591	30.1188	0.0784	3.8381	1.0102	4.8483	1.0276	0.9672	1.9949	0.0000	7,732.0974	7,732.0974	0.6909	0.0000	7,749.3701
Maximum	**219.1890**	**44.6804**	**32.0179**	**0.0797**	**3.8929**	**1.2996**	**5.0472**	**1.6641**	**1.2144**	**2.7290**	**0.0000**	**8,343.8082**	**8,343.8082**	**1.0757**	**0.0000**	**8,370.7006**

	ROG	NOx	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**	**34.58**	**0.00**	**29.22**	**43.65**	**0.00**	**30.63**	**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	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.3037	4.0401	32.0424	0.1053	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		10,529.0856	10,529.0856	0.3173		10,537.0172
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**11.0213**	**9.6108**	**59.2528**	**0.1403**	**9.7646**	**0.6416**	**10.4062**	**2.6009**	**0.6358**	**3.2367**	**0.0000**	**17,317.7259**	**17,317.7259**	**0.4899**	**0.1236**	**17,366.8169**

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	lb/day										lb/day					
Area	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.3037	4.0401	32.0424	0.1053	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		10,529.0856	10,529.0856	0.3173		10,537.0172
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**11.0213**	**9.6108**	**59.2528**	**0.1403**	**9.7646**	**0.6416**	**10.4062**	**2.6009**	**0.6358**	**3.2367**	**0.0000**	**17,317.7259**	**17,317.7259**	**0.4899**	**0.1236**	**17,366.8169**

	ROG	NOx	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	Demolition	Demolition	10/1/2019	10/28/2019	5	20	
2	Site Preparation	Site Preparation	10/29/2019	10/31/2019	5	3	
3	Grading	Grading	11/1/2019	11/8/2019	5	6	
4	Building Construction	Building Construction	11/9/2019	9/11/2020	5	220	
5	Paving	Paving	9/12/2020	9/25/2020	5	10	
6	Architectural Coating	Architectural Coating	9/26/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

Residential Indoor: 668,159; Residential Outdoor: 222,720; Non-Residential Indoor: 10,620; Non-Residential Outdoor: 3,540; Striped Parking Area: 12,172 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	214.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	429.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	305.00	67.00	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	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2019

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					2.3187	0.0000	2.3187	0.3511	0.0000	0.3511			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017		2,360.7198	2,360.7198	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**2.3187**	**1.2863**	**3.6050**	**0.3511**	**1.2017**	**1.5528**		**2,360.7198**	**2,360.7198**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1006	3.2772	0.6987	8.5500e-003	0.1871	0.0120	0.1991	0.0513	0.0115	0.0628		925.0276	925.0276	0.0637		926.6202
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	0.0649	0.0477	0.6268	1.5800e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		157.6839	157.6839	5.4200e-003		157.8193
Total	**0.1655**	**3.3250**	**1.3256**	**0.0101**	**0.3324**	**0.0133**	**0.3457**	**0.0898**	**0.0127**	**0.1025**		**1,082.7115**	**1,082.7115**	**0.0691**		**1,084.4395**

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					0.8869	0.0000	0.8869	0.1343	0.0000	0.1343			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017	0.0000	2,360.7197	2,360.7197	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**0.8869**	**1.2863**	**2.1732**	**0.1343**	**1.2017**	**1.3360**	**0.0000**	**2,360.7197**	**2,360.7197**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1006	3.2772	0.6987	8.5500e-003	0.1871	0.0120	0.1991	0.0513	0.0115	0.0628		925.0276	925.0276	0.0637		926.6202
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	0.0649	0.0477	0.6268	1.5800e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		157.6839	157.6839	5.4200e-003		157.8193
Total	**0.1655**	**3.3250**	**1.3256**	**0.0101**	**0.3324**	**0.0133**	**0.3457**	**0.0898**	**0.0127**	**0.1025**		**1,082.7115**	**1,082.7115**	**0.0691**		**1,084.4395**

3.3 Site Preparation - 2019

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**1.5908**	**0.8537**	**2.4445**	**0.1718**	**0.7854**	**0.9572**		**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0400	0.0294	0.3857	9.7000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		97.0362	97.0362	3.3300e-003		97.1196
Total	**0.0400**	**0.0294**	**0.3857**	**9.7000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**97.0362**	**97.0362**	**3.3300e-003**		**97.1196**

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					0.6085	0.0000	0.6085	0.0657	0.0000	0.0657			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.6085**	**0.8537**	**1.4622**	**0.0657**	**0.7854**	**0.8511**	**0.0000**	**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0400	0.0294	0.3857	9.7000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		97.0362	97.0362	3.3300e-003		97.1196
Total	**0.0400**	**0.0294**	**0.3857**	**9.7000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**97.0362**	**97.0362**	**3.3300e-003**		**97.1196**

3.4 Grading - 2019

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					6.6170	0.0000	6.6170	3.3773	0.0000	3.3773			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**6.6170**	**1.0730**	**7.6900**	**3.3773**	**0.9871**	**4.3644**		**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6719	21.8992	4.6691	0.0571	1.2501	0.0804	1.3305	0.3427	0.0769	0.4195		6,181.2590	6,181.2590	0.4257		6,191.9014
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	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.7218**	**21.9360**	**5.1513**	**0.0584**	**1.3619**	**0.0813**	**1.4432**	**0.3723**	**0.0778**	**0.4501**		**6,302.5543**	**6,302.5543**	**0.4299**		**6,313.3009**

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					2.5310	0.0000	2.5310	1.2918	0.0000	1.2918			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**2.5310**	**1.0730**	**3.6040**	**1.2918**	**0.9871**	**2.2789**	**0.0000**	**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6719	21.8992	4.6691	0.0571	1.2501	0.0804	1.3305	0.3427	0.0769	0.4195		6,181.2590	6,181.2590	0.4257		6,191.9014
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	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.7218**	**21.9360**	**5.1513**	**0.0584**	**1.3619**	**0.0813**	**1.4432**	**0.3723**	**0.0778**	**0.4501**		**6,302.5543**	**6,302.5543**	**0.4299**		**6,313.3009**

3.5 Building Construction - 2019

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2784	7.7539	2.0574	0.0175	0.4289	0.0494	0.4784	0.1235	0.0473	0.1708		1,868.0579	1,868.0579	0.1197		1,871.0507
Worker	1.5237	1.1198	14.7060	0.0372	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,699.5063	3,699.5063	0.1271		3,702.6831
Total	**1.8021**	**8.8737**	**16.7634**	**0.0547**	**3.8381**	**0.0788**	**3.9169**	**1.0276**	**0.0744**	**1.1020**		**5,567.5642**	**5,567.5642**	**0.2468**		**5,573.7338**

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2784	7.7539	2.0574	0.0175	0.4289	0.0494	0.4784	0.1235	0.0473	0.1708		1,868.0579	1,868.0579	0.1197		1,871.0507
Worker	1.5237	1.1198	14.7060	0.0372	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,699.5063	3,699.5063	0.1271		3,702.6831
Total	**1.8021**	**8.8737**	**16.7634**	**0.0547**	**3.8381**	**0.0788**	**3.9169**	**1.0276**	**0.0744**	**1.1020**		**5,567.5642**	**5,567.5642**	**0.2468**		**5,573.7338**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2383	7.1270	1.8673	0.0174	0.4289	0.0335	0.4625	0.1235	0.0321	0.1556		1,856.0655	1,856.0655	0.1133		1,858.8970
Worker	1.4036	0.9985	13.3543	0.0360	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,587.1443	3,587.1443	0.1131		3,589.9716
Total	**1.6419**	**8.1255**	**15.2216**	**0.0534**	**3.8381**	**0.0620**	**3.9002**	**1.0276**	**0.0584**	**1.0860**		**5,443.2097**	**5,443.2097**	**0.2264**		**5,448.8687**

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	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2383	7.1270	1.8673	0.0174	0.4289	0.0335	0.4625	0.1235	0.0321	0.1556		1,856.0655	1,856.0655	0.1133		1,858.8970
Worker	1.4036	0.9985	13.3543	0.0360	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,587.1443	3,587.1443	0.1131		3,589.9716
Total	**1.6419**	**8.1255**	**15.2216**	**0.0534**	**3.8381**	**0.0620**	**3.9002**	**1.0276**	**0.0584**	**1.0860**		**5,443.2097**	**5,443.2097**	**0.2264**		**5,448.8687**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0690**	**0.0491**	**0.6568**	**1.7700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**176.4169**	**176.4169**	**5.5600e-003**		**176.5560**

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0690**	**0.0491**	**0.6568**	**1.7700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**176.4169**	**176.4169**	**5.5600e-003**		**176.5560**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	218.6661					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**218.9083**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.2807	0.1997	2.6709	7.2000e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		717.4289	717.4289	0.0226		717.9943
Total	**0.2807**	**0.1997**	**2.6709**	**7.2000e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**717.4289**	**717.4289**	**0.0226**		**717.9943**

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	218.6661					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**218.9083**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.2807	0.1997	2.6709	7.2000e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		717.4289	717.4289	0.0226		717.9943
Total	**0.2807**	**0.1997**	**2.6709**	**7.2000e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**717.4289**	**717.4289**	**0.0226**		**717.9943**

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	2.3037	4.0401	32.0424	0.1053	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		10,529.0856	10,529.0856	0.3173		10,537.0172
Unmitigated	2.3037	4.0401	32.0424	0.1053	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		10,529.0856	10,529.0856	0.3173		10,537.0172

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,232.16	1,183.84	1084.18	4,114,651	4,114,651
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	169.99	198.88	100.47	355,107	355,107
Total	1,402.15	1,382.72	1,184.65	4,469,758	4,469,758

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
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Enclosed Parking with Elevator	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Non-Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Regional Shopping Center	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	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	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
NaturalGas Unmitigated	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084

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					
Apartments Mid Rise	11084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	31.8115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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					
Apartments Mid Rise	11.084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0318115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Unmitigated	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5991					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.5977**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5991					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.5977**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

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
Emergency Generator	1	0	12	50	0.73	Diesel
Fire Pump	1	0	6	50	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Fire Pump - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

Arroyo at Monrovia Station

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	141.22	1000sqft	0.54	166,720.00	0
Other Asphalt Surfaces	23.28	1000sqft	0.53	23,280.00	0
Other Non-Asphalt Surfaces	12.86	1000sqft	0.30	12,860.00	0
Apartments Mid Rise	302.00	Dwelling Unit	1.53	329,955.00	603
Regional Shopping Center	7.08	1000sqft	0.00	7,080.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	427.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia Station - Los Angeles-South Coast County, Winter

Project Characteristics - CO2 and CH4 intensity updated for 2022

Land Use - lot acreage and SF from site plan and project description
Retail footrpint added to residenital footprint

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113

Vehicle Trips - Trip rates obtained from the TIS

Woodstoves - SCAQMD Rule 445

Consumer Products -

Area Coating - SCAQMD Rule 1113

Energy Use - Reduce commercial lighting by 30% per 2019 Cal Green

Solid Waste - Apply 75% waste diversion rate per AB341

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Mobile Land Use Mitigation -

Fleet Mix - No trips associated with HHD; OBUS; UBUS; SBUS; MH. These trips re allocated to LDA

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	55
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	55
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.10	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00

tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblGrading	MaterialExported	0.00	3,430.00
tblLandUse	LandUseSquareFeet	141,220.00	166,720.00

tblLandUse	LandUseSquareFeet	302,000.00	329,955.00
tblLandUse	LotAcreage	3.24	0.54
tblLandUse	LotAcreage	7.95	1.53
tblLandUse	LotAcreage	0.16	0.00
tblLandUse	Population	864.00	603.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	427.1
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	138.92	34.73
tblSolidWaste	SolidWasteGenerationRate	7.43	1.86
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	6.39	3.92
tblVehicleTrips	ST_TR	49.97	28.09
tblVehicleTrips	SU_TR	5.86	3.59
tblVehicleTrips	SU_TR	25.24	14.19
tblVehicleTrips	WD_TR	6.65	4.08
tblVehicleTrips	WD_TR	42.70	24.01
tblWoodstoves	NumberCatalytic	15.10	0.00
tblWoodstoves	NumberNoncatalytic	15.10	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.5374	44.9765	31.0178	0.0779	7.9789	1.2998	9.1347	3.7496	1.2146	4.8159	0.0000	8,231.8922	8,231.8922	1.0917	0.0000	8,259.1842
2020	219.2200	25.6646	29.1875	0.0758	3.8381	1.0108	4.8489	1.0276	0.9677	1.9954	0.0000	7,471.8286	7,471.8286	0.6917	0.0000	7,489.1218
Maximum	**219.2200**	**44.9765**	**31.0178**	**0.0779**	**7.9789**	**1.2998**	**9.1347**	**3.7496**	**1.2146**	**4.8159**	**0.0000**	**8,231.8922**	**8,231.8922**	**1.0917**	**0.0000**	**8,259.1842**

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					
2019	4.5374	44.9765	31.0178	0.0779	3.8929	1.2998	5.0487	1.6641	1.2146	2.7305	0.0000	8,231.8922	8,231.8922	1.0917	0.0000	8,259.1842
2020	219.2200	25.6646	29.1875	0.0758	3.8381	1.0108	4.8489	1.0276	0.9677	1.9954	0.0000	7,471.8286	7,471.8286	0.6917	0.0000	7,489.1218
Maximum	**219.2200**	**44.9765**	**31.0178**	**0.0779**	**3.8929**	**1.2998**	**5.0487**	**1.6641**	**1.2146**	**2.7305**	**0.0000**	**8,231.8922**	**8,231.8922**	**1.0917**	**0.0000**	**8,259.1842**

	ROG	NOx	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**	**34.58**	**0.00**	**29.22**	**43.65**	**0.00**	**30.62**	**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	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.2188	4.3234	30.0925	0.0998	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		9,978.1247	9,978.1247	0.3071		9,985.8022
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**10.9364**	**9.8940**	**57.3028**	**0.1348**	**9.7646**	**0.6416**	**10.4062**	**2.6009**	**0.6358**	**3.2367**	**0.0000**	**16,766.7650**	**16,766.7650**	**0.4797**	**0.1236**	**16,815.6019**

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	lb/day										lb/day					
Area	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.2188	4.3234	30.0925	0.0998	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		9,978.1247	9,978.1247	0.3071		9,985.8022
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**10.9364**	**9.8940**	**57.3028**	**0.1348**	**9.7646**	**0.6416**	**10.4062**	**2.6009**	**0.6358**	**3.2367**	**0.0000**	**16,766.7650**	**16,766.7650**	**0.4797**	**0.1236**	**16,815.6019**

	ROG	NOx	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

Arroyo at Monrovia Station - Los Angeles-South Coast County, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2019	10/28/2019	5	20	
2	Site Preparation	Site Preparation	10/29/2019	10/31/2019	5	3	
3	Grading	Grading	11/1/2019	11/8/2019	5	6	
4	Building Construction	Building Construction	11/9/2019	9/11/2020	5	220	
5	Paving	Paving	9/12/2020	9/25/2020	5	10	
6	Architectural Coating	Architectural Coating	9/26/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

Residential Indoor: 668,159; Residential Outdoor: 222,720; Non-Residential Indoor: 10,620; Non-Residential Outdoor: 3,540; Striped Parking Area: 12,172 (Architectural Coating – sqft)

OffRoad Equipment

Arroyo at Monrovia Station - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	214.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	429.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	305.00	67.00	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	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2019

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					2.3187	0.0000	2.3187	0.3511	0.0000	0.3511			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017		2,360.7198	2,360.7198	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**2.3187**	**1.2863**	**3.6050**	**0.3511**	**1.2017**	**1.5528**		**2,360.7198**	**2,360.7198**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1031	3.3210	0.7460	8.4000e-003	0.1871	0.0123	0.1993	0.0513	0.0117	0.0630		909.3392	909.3392	0.0661		910.9925
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	0.0720	0.0529	0.5752	1.4900e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		148.4770	148.4770	5.1100e-003		148.6047
Total	**0.1751**	**3.3738**	**1.3212**	**9.8900e-003**	**0.3324**	**0.0135**	**0.3459**	**0.0898**	**0.0129**	**0.1027**		**1,057.8162**	**1,057.8162**	**0.0712**		**1,059.5972**

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					0.8869	0.0000	0.8869	0.1343	0.0000	0.1343			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017	0.0000	2,360.7197	2,360.7197	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**0.8869**	**1.2863**	**2.1732**	**0.1343**	**1.2017**	**1.3360**	**0.0000**	**2,360.7197**	**2,360.7197**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1031	3.3210	0.7460	8.4000e-003	0.1871	0.0123	0.1993	0.0513	0.0117	0.0630		909.3392	909.3392	0.0661		910.9925
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	0.0720	0.0529	0.5752	1.4900e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		148.4770	148.4770	5.1100e-003		148.6047
Total	**0.1751**	**3.3738**	**1.3212**	**9.8900e-003**	**0.3324**	**0.0135**	**0.3459**	**0.0898**	**0.0129**	**0.1027**		**1,057.8162**	**1,057.8162**	**0.0712**		**1,059.5972**

3.3 Site Preparation - 2019

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**1.5908**	**0.8537**	**2.4445**	**0.1718**	**0.7854**	**0.9572**		**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0443	0.0325	0.3540	9.2000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		91.3705	91.3705	3.1400e-003		91.4491
Total	**0.0443**	**0.0325**	**0.3540**	**9.2000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**91.3705**	**91.3705**	**3.1400e-003**		**91.4491**

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					0.6085	0.0000	0.6085	0.0657	0.0000	0.0657			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.6085**	**0.8537**	**1.4622**	**0.0657**	**0.7854**	**0.8511**	**0.0000**	**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0443	0.0325	0.3540	9.2000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		91.3705	91.3705	3.1400e-003		91.4491
Total	**0.0443**	**0.0325**	**0.3540**	**9.2000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**91.3705**	**91.3705**	**3.1400e-003**		**91.4491**

3.4 Grading - 2019

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					6.6170	0.0000	6.6170	3.3773	0.0000	3.3773			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**6.6170**	**1.0730**	**7.6900**	**3.3773**	**0.9871**	**4.3644**		**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6887	22.1915	4.9847	0.0562	1.2501	0.0819	1.3320	0.3427	0.0783	0.4210		6,076.4252	6,076.4252	0.4419		6,087.4732
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	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.7441**	**22.2321**	**5.4271**	**0.0573**	**1.3619**	**0.0828**	**1.4447**	**0.3723**	**0.0792**	**0.4515**		**6,190.6383**	**6,190.6383**	**0.4459**		**6,201.7845**

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					2.5310	0.0000	2.5310	1.2918	0.0000	1.2918			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**2.5310**	**1.0730**	**3.6040**	**1.2918**	**0.9871**	**2.2789**	**0.0000**	**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6887	22.1915	4.9847	0.0562	1.2501	0.0819	1.3320	0.3427	0.0783	0.4210		6,076.4252	6,076.4252	0.4419		6,087.4732
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	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.7441**	**22.2321**	**5.4271**	**0.0573**	**1.3619**	**0.0828**	**1.4447**	**0.3723**	**0.0792**	**0.4515**		**6,190.6383**	**6,190.6383**	**0.4459**		**6,201.7845**

3.5 Building Construction - 2019

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2904	7.7643	2.2678	0.0170	0.4289	0.0503	0.4792	0.1235	0.0481	0.1716		1,817.5566	1,817.5566	0.1277		1,820.7487
Worker	1.6890	1.2401	13.4955	0.0350	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,483.4990	3,483.4990	0.1198		3,486.4949
Total	**1.9794**	**9.0044**	**15.7633**	**0.0520**	**3.8381**	**0.0797**	**3.9178**	**1.0276**	**0.0752**	**1.1028**		**5,301.0556**	**5,301.0556**	**0.2475**		**5,307.2436**

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2904	7.7643	2.2678	0.0170	0.4289	0.0503	0.4792	0.1235	0.0481	0.1716		1,817.5566	1,817.5566	0.1277		1,820.7487
Worker	1.6890	1.2401	13.4955	0.0350	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,483.4990	3,483.4990	0.1198		3,486.4949
Total	**1.9794**	**9.0044**	**15.7633**	**0.0520**	**3.8381**	**0.0797**	**3.9178**	**1.0276**	**0.0752**	**1.1028**		**5,301.0556**	**5,301.0556**	**0.2475**		**5,307.2436**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2491	7.1255	2.0595	0.0169	0.4289	0.0341	0.4630	0.1235	0.0326	0.1561		1,805.3087	1,805.3087	0.1207		1,808.3267
Worker	1.5586	1.1055	12.2308	0.0339	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,377.6322	3,377.6322	0.1065		3,380.2937
Total	**1.8077**	**8.2310**	**14.2903**	**0.0508**	**3.8381**	**0.0626**	**3.9007**	**1.0276**	**0.0589**	**1.0865**		**5,182.9409**	**5,182.9409**	**0.2272**		**5,188.6204**

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	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2491	7.1255	2.0595	0.0169	0.4289	0.0341	0.4630	0.1235	0.0326	0.1561		1,805.3087	1,805.3087	0.1207		1,808.3267
Worker	1.5586	1.1055	12.2308	0.0339	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,377.6322	3,377.6322	0.1065		3,380.2937
Total	**1.8077**	**8.2310**	**14.2903**	**0.0508**	**3.8381**	**0.0626**	**3.9007**	**1.0276**	**0.0589**	**1.0865**		**5,182.9409**	**5,182.9409**	**0.2272**		**5,188.6204**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0767**	**0.0544**	**0.6015**	**1.6700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**166.1131**	**166.1131**	**5.2400e-003**		**166.2440**

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0767**	**0.0544**	**0.6015**	**1.6700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**166.1131**	**166.1131**	**5.2400e-003**		**166.2440**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	218.6661					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**218.9083**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.3117	0.2211	2.4462	6.7800e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		675.5264	675.5264	0.0213		676.0587
Total	**0.3117**	**0.2211**	**2.4462**	**6.7800e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**675.5264**	**675.5264**	**0.0213**		**676.0587**

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	218.6661					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**218.9083**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.3117	0.2211	2.4462	6.7800e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		675.5264	675.5264	0.0213		676.0587
Total	**0.3117**	**0.2211**	**2.4462**	**6.7800e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**675.5264**	**675.5264**	**0.0213**		**676.0587**

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	2.2188	4.3234	30.0925	0.0998	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		9,978.1247	9,978.1247	0.3071		9,985.8022
Unmitigated	2.2188	4.3234	30.0925	0.0998	9.7646	0.0766	9.8412	2.6009	0.0708	2.6717		9,978.1247	9,978.1247	0.3071		9,985.8022

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,232.16	1,183.84	1084.18	4,114,651	4,114,651
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	169.99	198.88	100.47	355,107	355,107
Total	1,402.15	1,382.72	1,184.65	4,469,758	4,469,758

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
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Enclosed Parking with Elevator	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Non-Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Regional Shopping Center	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	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	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
NaturalGas Unmitigated	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084

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					
Apartments Mid Rise	11084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	31.8115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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					
Apartments Mid Rise	11.084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0318115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Unmitigated	8.5976	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5991					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.5977**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5991					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.5977**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

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
Emergency Generator	1	0	12	50	0.73	Diesel
Fire Pump	1	0	6	50	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Fire Pump - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

Arroyo at Monrovia Station

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	141.22	1000sqft	0.54	166,720.00	0
Other Asphalt Surfaces	23.28	1000sqft	0.53	23,280.00	0
Other Non-Asphalt Surfaces	12.86	1000sqft	0.30	12,860.00	0
Apartments Mid Rise	302.00	Dwelling Unit	1.53	329,955.00	603
Regional Shopping Center	7.08	1000sqft	0.00	7,080.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	427.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 and CH4 intensity updated for 2022

Land Use - lot acreage and SF from site plan and project description
Retail footrpint added to residenital footprint

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113 - 'super compliant'

Vehicle Trips - Trip rates obtained from the TIS

Woodstoves - SCAQMD Rule 445

Consumer Products -

Area Coating - SCAQMD Rule 1113 - 'super compliant'

Energy Use - Reduce commercial lighting by 30% per 2019 Cal Green

Solid Waste - Apply 75% waste diversion rate per AB341

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Mobile Land Use Mitigation -

Fleet Mix - No trips associated with HHD; OBUS; UBUS; SBUS; MH. These trips re allocated to LDA

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	10.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	10.00
tblArchitecturalCoating	EF_Parking	100.00	10.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	10.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	10.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	10
tblAreaCoating	Area_EF_Nonresidential_Interior	100	10
tblAreaCoating	Area_EF_Parking	100	10
tblAreaCoating	Area_EF_Residential_Exterior	50	10
tblAreaCoating	Area_EF_Residential_Interior	50	10

tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	55
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	55
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.10	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00

tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblGrading	MaterialExported	0.00	3,430.00
tblLandUse	LandUseSquareFeet	141,220.00	166,720.00
tblLandUse	LandUseSquareFeet	302,000.00	329,955.00
tblLandUse	LotAcreage	3.24	0.54
tblLandUse	LotAcreage	7.95	1.53
tblLandUse	LotAcreage	0.16	0.00
tblLandUse	Population	864.00	603.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	427.1
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	138.92	34.73
tblSolidWaste	SolidWasteGenerationRate	7.43	1.86
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	HO_TTP	40.60	41.00
tblVehicleTrips	HS_TTP	19.20	19.00

tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	3.92
tblVehicleTrips	ST_TR	49.97	28.09
tblVehicleTrips	SU_TR	5.86	3.59
tblVehicleTrips	SU_TR	25.24	14.19
tblVehicleTrips	WD_TR	6.65	4.08
tblVehicleTrips	WD_TR	42.70	24.01
tblWoodstoves	NumberCatalytic	15.10	0.00
tblWoodstoves	NumberNoncatalytic	15.10	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1164	0.9496	0.8051	2.0600e-003	0.1225	0.0394	0.1619	0.0346	0.0372	0.0718	0.0000	186.3557	186.3557	0.0223	0.0000	186.9124
2020	0.5824	2.4312	2.7755	7.1600e-003	0.3486	0.0963	0.4449	0.0935	0.0921	0.1856	0.0000	640.2364	640.2364	0.0599	0.0000	641.7338
Maximum	**0.5824**	**2.4312**	**2.7755**	**7.1600e-003**	**0.3486**	**0.0963**	**0.4449**	**0.0935**	**0.0921**	**0.1856**	**0.0000**	**640.2364**	**640.2364**	**0.0599**	**0.0000**	**641.7338**

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					
2019	0.1164	0.9496	0.8051	2.0600e-003	0.0944	0.0394	0.1338	0.0260	0.0372	0.0632	0.0000	186.3556	186.3556	0.0223	0.0000	186.9123
2020	0.5824	2.4312	2.7755	7.1600e-003	0.3486	0.0963	0.4449	0.0935	0.0921	0.1856	0.0000	640.2361	640.2361	0.0599	0.0000	641.7336
Maximum	**0.5824**	**2.4312**	**2.7755**	**7.1600e-003**	**0.3486**	**0.0963**	**0.4449**	**0.0935**	**0.0921**	**0.1856**	**0.0000**	**640.2361**	**640.2361**	**0.0599**	**0.0000**	**641.7336**

	ROG	NOx	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**	**5.95**	**0.00**	**4.62**	**6.70**	**0.00**	**3.34**	**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	10-1-2019	12-31-2019	1.0609	1.0609
2	1-1-2020	3-31-2020	0.9672	0.9672
3	4-1-2020	6-30-2020	0.9584	0.9584
4	7-1-2020	9-30-2020	0.9140	0.9140
		Highest	1.0609	1.0609

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	1.3529	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245
Energy	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	661.1399	661.1399	0.0385	8.1300e-003	664.5263
Mobile	0.3780	0.7699	5.3660	0.0177	1.6774	0.0134	1.6908	0.4475	0.0124	0.4599	0.0000	1,607.3161	1,607.3161	0.0492	0.0000	1,608.5457
Stationary	7.4000e-004	2.4100e-003	2.6800e-003	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.3427	0.3427	5.0000e-005	0.0000	0.3439
Waste						0.0000	0.0000		0.0000	0.0000	7.4274	0.0000	7.4274	0.4390	0.0000	18.4012
Water						0.0000	0.0000		0.0000	0.0000	6.4088	78.3489	84.7577	0.6643	0.0163	106.2156
Total	**1.7535**	**1.0485**	**8.5912**	**0.0194**	**1.6774**	**0.0502**	**1.7276**	**0.4475**	**0.0492**	**0.4967**	**13.8363**	**2,413.8828**	**2,427.7190**	**1.1971**	**0.0255**	**2,465.2572**

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	1.3529	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245
Energy	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	661.1399	661.1399	0.0385	8.1300e-003	664.5263
Mobile	0.3780	0.7699	5.3660	0.0177	1.6774	0.0134	1.6908	0.4475	0.0124	0.4599	0.0000	1,607.3161	1,607.3161	0.0492	0.0000	1,608.5457
Stationary	7.4000e-004	2.4100e-003	2.6800e-003	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.3427	0.3427	5.0000e-005	0.0000	0.3439
Waste						0.0000	0.0000		0.0000	0.0000	7.4274	0.0000	7.4274	0.4390	0.0000	18.4012
Water						0.0000	0.0000		0.0000	0.0000	6.4088	78.3489	84.7577	0.6643	0.0163	106.2156
Total	**1.7535**	**1.0485**	**8.5912**	**0.0194**	**1.6774**	**0.0502**	**1.7276**	**0.4475**	**0.0492**	**0.4967**	**13.8363**	**2,413.8828**	**2,427.7190**	**1.1971**	**0.0255**	**2,465.2572**

	ROG	NOx	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	Demolition	Demolition	10/1/2019	10/28/2019	5	20	
2	Site Preparation	Site Preparation	10/29/2019	10/31/2019	5	3	
3	Grading	Grading	11/1/2019	11/8/2019	5	6	
4	Building Construction	Building Construction	11/9/2019	9/11/2020	5	220	
5	Paving	Paving	9/12/2020	9/25/2020	5	10	
6	Architectural Coating	Architectural Coating	9/26/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

Residential Indoor: 668,159; Residential Outdoor: 222,720; Non-Residential Indoor: 10,620; Non-Residential Outdoor: 3,540; Striped Parking Area: 12,172 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	214.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	429.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	305.00	67.00	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	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2019

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					0.0232	0.0000	0.0232	3.5100e-003	0.0000	3.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0230	0.2268	0.1489	2.4000e-004		0.0129	0.0129		0.0120	0.0120	0.0000	21.4161	21.4161	5.4500e-003	0.0000	21.5524
Total	**0.0230**	**0.2268**	**0.1489**	**2.4000e-004**	**0.0232**	**0.0129**	**0.0361**	**3.5100e-003**	**0.0120**	**0.0155**	**0.0000**	**21.4161**	**21.4161**	**5.4500e-003**	**0.0000**	**21.5524**

3.2 Demolition - 2019

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	1.0200e-003	0.0339	7.1900e-003	8.0000e-005	1.8400e-003	1.2000e-004	1.9600e-003	5.0000e-004	1.2000e-004	6.2000e-004	0.0000	8.3319	8.3319	5.9000e-004	0.0000	8.3466
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	6.5000e-004	5.4000e-004	5.9000e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3694	1.3694	5.0000e-005	0.0000	1.3705
Total	**1.6700e-003**	**0.0344**	**0.0131**	**1.0000e-004**	**3.2600e-003**	**1.3000e-004**	**3.4000e-003**	**8.8000e-004**	**1.3000e-004**	**1.0100e-003**	**0.0000**	**9.7013**	**9.7013**	**6.4000e-004**	**0.0000**	**9.7172**

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					8.8700e-003	0.0000	8.8700e-003	1.3400e-003	0.0000	1.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0230	0.2268	0.1489	2.4000e-004		0.0129	0.0129		0.0120	0.0120	0.0000	21.4161	21.4161	5.4500e-003	0.0000	21.5524
Total	**0.0230**	**0.2268**	**0.1489**	**2.4000e-004**	**8.8700e-003**	**0.0129**	**0.0217**	**1.3400e-003**	**0.0120**	**0.0134**	**0.0000**	**21.4161**	**21.4161**	**5.4500e-003**	**0.0000**	**21.5524**

3.2 Demolition - 2019

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	1.0200e-003	0.0339	7.1900e-003	8.0000e-005	1.8400e-003	1.2000e-004	1.9600e-003	5.0000e-004	1.2000e-004	6.2000e-004	0.0000	8.3319	8.3319	5.9000e-004	0.0000	8.3466
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	6.5000e-004	5.4000e-004	5.9000e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3694	1.3694	5.0000e-005	0.0000	1.3705
Total	**1.6700e-003**	**0.0344**	**0.0131**	**1.0000e-004**	**3.2600e-003**	**1.3000e-004**	**3.4000e-003**	**8.8000e-004**	**1.3000e-004**	**1.0100e-003**	**0.0000**	**9.7013**	**9.7013**	**6.4000e-004**	**0.0000**	**9.7172**

3.3 Site Preparation - 2019

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	**2.6300e-003**	**0.0323**	**0.0179**	**4.0000e-005**	**2.3900e-003**	**1.2800e-003**	**3.6700e-003**	**2.6000e-004**	**1.1800e-003**	**1.4400e-003**	**0.0000**	**3.3020**	**3.3020**	**1.0400e-003**	**0.0000**	**3.3281**

3.3 Site Preparation - 2019

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	6.0000e-005	5.0000e-005	5.4000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265
Total	**6.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.0000**	**0.1265**

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					9.1000e-004	0.0000	9.1000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	**2.6300e-003**	**0.0323**	**0.0179**	**4.0000e-005**	**9.1000e-004**	**1.2800e-003**	**2.1900e-003**	**1.0000e-004**	**1.1800e-003**	**1.2800e-003**	**0.0000**	**3.3020**	**3.3020**	**1.0400e-003**	**0.0000**	**3.3281**

3.3 Site Preparation - 2019

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	6.0000e-005	5.0000e-005	5.4000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1264	0.1264	0.0000	0.0000	0.1265
Total	**6.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**3.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1264**	**0.1264**	**0.0000**	**0.0000**	**0.1265**

3.4 Grading - 2019

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					0.0199	0.0000	0.0199	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	**6.0900e-003**	**0.0682**	**0.0305**	**6.0000e-005**	**0.0199**	**3.2200e-003**	**0.0231**	**0.0101**	**2.9600e-003**	**0.0131**	**0.0000**	**5.5554**	**5.5554**	**1.7600e-003**	**0.0000**	**5.5993**

3.4 Grading - 2019

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	2.0400e-003	0.0679	0.0144	1.7000e-004	3.6900e-003	2.4000e-004	3.9300e-003	1.0100e-003	2.3000e-004	1.2400e-003	0.0000	16.7028	16.7028	1.1800e-003	0.0000	16.7323
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	1.5000e-004	1.3000e-004	1.3600e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3160	0.3160	1.0000e-005	0.0000	0.3163
Total	**2.1900e-003**	**0.0680**	**0.0158**	**1.7000e-004**	**4.0200e-003**	**2.4000e-004**	**4.2600e-003**	**1.1000e-003**	**2.3000e-004**	**1.3300e-003**	**0.0000**	**17.0188**	**17.0188**	**1.1900e-003**	**0.0000**	**17.0485**

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					7.5900e-003	0.0000	7.5900e-003	3.8800e-003	0.0000	3.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	**6.0900e-003**	**0.0682**	**0.0305**	**6.0000e-005**	**7.5900e-003**	**3.2200e-003**	**0.0108**	**3.8800e-003**	**2.9600e-003**	**6.8400e-003**	**0.0000**	**5.5554**	**5.5554**	**1.7600e-003**	**0.0000**	**5.5993**

3.4 Grading - 2019

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	2.0400e-003	0.0679	0.0144	1.7000e-004	3.6900e-003	2.4000e-004	3.9300e-003	1.0100e-003	2.3000e-004	1.2400e-003	0.0000	16.7028	16.7028	1.1800e-003	0.0000	16.7323
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	1.5000e-004	1.3000e-004	1.3600e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3160	0.3160	1.0000e-005	0.0000	0.3163
Total	**2.1900e-003**	**0.0680**	**0.0158**	**1.7000e-004**	**4.0200e-003**	**2.4000e-004**	**4.2600e-003**	**1.1000e-003**	**2.3000e-004**	**1.3300e-003**	**0.0000**	**17.0188**	**17.0188**	**1.1900e-003**	**0.0000**	**17.0485**

3.5 Building Construction - 2019

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	0.0473	0.3498	0.2822	4.6000e-004		0.0202	0.0202		0.0193	0.0193	0.0000	38.8046	38.8046	8.0700e-003	0.0000	39.0064
Total	**0.0473**	**0.3498**	**0.2822**	**4.6000e-004**		**0.0202**	**0.0202**		**0.0193**	**0.0193**	**0.0000**	**38.8046**	**38.8046**	**8.0700e-003**	**0.0000**	**39.0064**

3.5 Building Construction - 2019

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	5.2500e-003	0.1464	0.0400	3.2000e-004	7.8100e-003	9.2000e-004	8.7300e-003	2.2500e-003	8.8000e-004	3.1300e-003	0.0000	30.9955	30.9955	2.0700e-003	0.0000	31.0472
Worker	0.0283	0.0236	0.2562	6.6000e-004	0.0618	5.4000e-004	0.0624	0.0164	5.0000e-004	0.0169	0.0000	59.4357	59.4357	2.0400e-003	0.0000	59.4868
Total	**0.0335**	**0.1700**	**0.2962**	**9.8000e-004**	**0.0696**	**1.4600e-003**	**0.0711**	**0.0187**	**1.3800e-003**	**0.0201**	**0.0000**	**90.4312**	**90.4312**	**4.1100e-003**	**0.0000**	**90.5340**

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	0.0473	0.3498	0.2822	4.6000e-004		0.0202	0.0202		0.0193	0.0193	0.0000	38.8045	38.8045	8.0700e-003	0.0000	39.0063
Total	**0.0473**	**0.3498**	**0.2822**	**4.6000e-004**		**0.0202**	**0.0202**		**0.0193**	**0.0193**	**0.0000**	**38.8045**	**38.8045**	**8.0700e-003**	**0.0000**	**39.0063**

3.5 Building Construction - 2019

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	5.2500e-003	0.1464	0.0400	3.2000e-004	7.8100e-003	9.2000e-004	8.7300e-003	2.2500e-003	8.8000e-004	3.1300e-003	0.0000	30.9955	30.9955	2.0700e-003	0.0000	31.0472
Worker	0.0283	0.0236	0.2562	6.6000e-004	0.0618	5.4000e-004	0.0624	0.0164	5.0000e-004	0.0169	0.0000	59.4357	59.4357	2.0400e-003	0.0000	59.4868
Total	**0.0335**	**0.1700**	**0.2962**	**9.8000e-004**	**0.0696**	**1.4600e-003**	**0.0711**	**0.0187**	**1.3800e-003**	**0.0201**	**0.0000**	**90.4312**	**90.4312**	**4.1100e-003**	**0.0000**	**90.5340**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2093	1.5952	1.3631	2.2900e-003		0.0868	0.0868		0.0832	0.0832	0.0000	189.9946	189.9946	0.0386	0.0000	190.9587
Total	**0.2093**	**1.5952**	**1.3631**	**2.2900e-003**		**0.0868**	**0.0868**		**0.0832**	**0.0832**	**0.0000**	**189.9946**	**189.9946**	**0.0386**	**0.0000**	**190.9587**

3.5 Building Construction - 2020

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	0.0222	0.6643	0.1798	1.5700e-003	0.0386	3.0900e-003	0.0417	0.0111	2.9600e-003	0.0141	0.0000	152.2977	152.2977	9.6800e-003	0.0000	152.5396
Worker	0.1288	0.1039	1.1488	3.1500e-003	0.3058	2.6100e-003	0.3084	0.0812	2.4000e-003	0.0836	0.0000	285.0334	285.0334	8.9800e-003	0.0000	285.2580
Total	**0.1511**	**0.7682**	**1.3286**	**4.7200e-003**	**0.3444**	**5.7000e-003**	**0.3501**	**0.0924**	**5.3600e-003**	**0.0977**	**0.0000**	**437.3311**	**437.3311**	**0.0187**	**0.0000**	**437.7976**

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	0.2093	1.5952	1.3631	2.2900e-003		0.0868	0.0868		0.0832	0.0832	0.0000	189.9944	189.9944	0.0386	0.0000	190.9584
Total	**0.2093**	**1.5952**	**1.3631**	**2.2900e-003**		**0.0868**	**0.0868**		**0.0832**	**0.0832**	**0.0000**	**189.9944**	**189.9944**	**0.0386**	**0.0000**	**190.9584**

3.5 Building Construction - 2020

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	0.0222	0.6643	0.1798	1.5700e-003	0.0386	3.0900e-003	0.0417	0.0111	2.9600e-003	0.0141	0.0000	152.2977	152.2977	9.6800e-003	0.0000	152.5396
Worker	0.1288	0.1039	1.1488	3.1500e-003	0.3058	2.6100e-003	0.3084	0.0812	2.4000e-003	0.0836	0.0000	285.0334	285.0334	8.9800e-003	0.0000	285.2580
Total	**0.1511**	**0.7682**	**1.3286**	**4.7200e-003**	**0.3444**	**5.7000e-003**	**0.3501**	**0.0924**	**5.3600e-003**	**0.0977**	**0.0000**	**437.3311**	**437.3311**	**0.0187**	**0.0000**	**437.7976**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	6.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666
Total	**3.5000e-004**	**2.8000e-004**	**3.0900e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7660**	**0.7660**	**2.0000e-005**	**0.0000**	**0.7666**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	6.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.4600e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666
Total	**3.5000e-004**	**2.8000e-004**	**3.0900e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7660**	**0.7660**	**2.0000e-005**	**0.0000**	**0.7666**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.2138**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

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	1.4100e-003	1.1400e-003	0.0126	3.0000e-005	3.3400e-003	3.0000e-005	3.3700e-003	8.9000e-004	3.0000e-005	9.1000e-004	0.0000	3.1151	3.1151	1.0000e-004	0.0000	3.1176
Total	**1.4100e-003**	**1.1400e-003**	**0.0126**	**3.0000e-005**	**3.3400e-003**	**3.0000e-005**	**3.3700e-003**	**8.9000e-004**	**3.0000e-005**	**9.1000e-004**	**0.0000**	**3.1151**	**3.1151**	**1.0000e-004**	**0.0000**	**3.1176**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.2138**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

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	1.4100e-003	1.1400e-003	0.0126	3.0000e-005	3.3400e-003	3.0000e-005	3.3700e-003	8.9000e-004	3.0000e-005	9.1000e-004	0.0000	3.1151	3.1151	1.0000e-004	0.0000	3.1176
Total	**1.4100e-003**	**1.1400e-003**	**0.0126**	**3.0000e-005**	**3.3400e-003**	**3.0000e-005**	**3.3700e-003**	**8.9000e-004**	**3.0000e-005**	**9.1000e-004**	**0.0000**	**3.1151**	**3.1151**	**1.0000e-004**	**0.0000**	**3.1176**

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	0.3780	0.7699	5.3660	0.0177	1.6774	0.0134	1.6908	0.4475	0.0124	0.4599	0.0000	1,607.3161	1,607.3161	0.0492	0.0000	1,608.5457
Unmitigated	0.3780	0.7699	5.3660	0.0177	1.6774	0.0134	1.6908	0.4475	0.0124	0.4599	0.0000	1,607.3161	1,607.3161	0.0492	0.0000	1,608.5457

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,232.16	1,183.84	1084.18	4,112,162	4,112,162
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	169.99	198.88	100.47	355,107	355,107
Total	1,402.15	1,382.72	1,184.65	4,467,269	4,467,269

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
Apartments Mid Rise	14.70	5.90	8.70	40.00	19.00	41.00	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Enclosed Parking with Elevator	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Non-Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Regional Shopping Center	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	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	444.6294	444.6294	0.0344	4.1600e-003	446.7292
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	444.6294	444.6294	0.0344	4.1600e-003	446.7292
NaturalGas Mitigated	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.5106	216.5106	4.1500e-003	3.9700e-003	217.7972
NaturalGas Unmitigated	0.0219	0.1870	0.0798	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	216.5106	216.5106	4.1500e-003	3.9700e-003	217.7972

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					
Apartments Mid Rise	4.04564e+006	0.0218	0.1864	0.0793	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8909	215.8909	4.1400e-003	3.9600e-003	217.1739
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	11611.2	6.0000e-005	5.7000e-004	4.8000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6196	0.6196	1.0000e-005	1.0000e-005	0.6233
Total		**0.0219**	**0.1870**	**0.0798**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**	**0.0000**	**216.5106**	**216.5106**	**4.1500e-003**	**3.9700e-003**	**217.7972**

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					
Apartments Mid Rise	4.04564e+006	0.0218	0.1864	0.0793	1.1900e-003		0.0151	0.0151		0.0151	0.0151	0.0000	215.8909	215.8909	4.1400e-003	3.9600e-003	217.1739
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	11611.2	6.0000e-005	5.7000e-004	4.8000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6196	0.6196	1.0000e-005	1.0000e-005	0.6233
Total		**0.0219**	**0.1870**	**0.0798**	**1.1900e-003**		**0.0151**	**0.0151**		**0.0151**	**0.0151**	**0.0000**	**216.5106**	**216.5106**	**4.1500e-003**	**3.9700e-003**	**217.7972**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.22255e+006	236.8432	0.0183	2.2200e-003	237.9618
Enclosed Parking with Elevator	976979	189.2695	0.0146	1.7700e-003	190.1633
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	95580	18.5167	1.4300e-003	1.7000e-004	18.6041
Total		**444.6294**	**0.0344**	**4.1600e-003**	**446.7292**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.22255e+006	236.8432	0.0183	2.2200e-003	237.9618
Enclosed Parking with Elevator	976979	189.2695	0.0146	1.7700e-003	190.1633
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	95580	18.5167	1.4300e-003	1.7000e-004	18.6041
Total		**444.6294**	**0.0344**	**4.1600e-003**	**446.7292**

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	1.3529	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245
Unmitigated	1.3529	0.0892	3.1428	5.0000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	66.7351	66.7351	6.1000e-003	1.1300e-003	67.2245

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	0.0213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.2300e-003	0.0532	0.0227	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6432	61.6432	1.1800e-003	1.1300e-003	62.0095
Landscaping	0.0944	0.0360	3.1201	1.6000e-004		0.0172	0.0172		0.0172	0.0172	0.0000	5.0919	5.0919	4.9200e-003	0.0000	5.2149
Total	**1.3529**	**0.0892**	**3.1428**	**5.0000e-004**		**0.0215**	**0.0215**		**0.0215**	**0.0215**	**0.0000**	**66.7351**	**66.7351**	**6.1000e-003**	**1.1300e-003**	**67.2245**

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	0.0213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.2300e-003	0.0532	0.0227	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.6432	61.6432	1.1800e-003	1.1300e-003	62.0095
Landscaping	0.0944	0.0360	3.1201	1.6000e-004		0.0172	0.0172		0.0172	0.0172	0.0000	5.0919	5.0919	4.9200e-003	0.0000	5.2149
Total	**1.3529**	**0.0892**	**3.1428**	**5.0000e-004**		**0.0215**	**0.0215**		**0.0215**	**0.0215**	**0.0000**	**66.7351**	**66.7351**	**6.1000e-003**	**1.1300e-003**	**67.2245**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	84.7577	0.6643	0.0163	106.2156
Unmitigated	84.7577	0.6643	0.0163	106.2156

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.6765 / 12.4048	82.5766	0.6471	0.0159	103.4776
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.524433 / 0.321427	2.1811	0.0172	4.2000e-004	2.7381
Total		**84.7577**	**0.6643**	**0.0163**	**106.2156**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	19.6765 / 12.4048	82.5766	0.6471	0.0159	103.4776
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.524433 / 0.321427	2.1811	0.0172	4.2000e-004	2.7381
Total		**84.7577**	**0.6643**	**0.0163**	**106.2156**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.4274	0.4390	0.0000	18.4012
Unmitigated	7.4274	0.4390	0.0000	18.4012

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	34.73	7.0499	0.4166	0.0000	17.4658
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.86	0.3776	0.0223	0.0000	0.9354
Total		**7.4274**	**0.4390**	**0.0000**	**18.4012**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	34.73	7.0499	0.4166	0.0000	17.4658
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	1.86	0.3776	0.0223	0.0000	0.9354
Total		**7.4274**	**0.4390**	**0.0000**	**18.4012**

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
Emergency Generator	1	0	12	50	0.73	Diesel
Fire Pump	1	0	6	50	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (50 - 75 HP)	4.9000e-004	1.6100e-003	1.7900e-003	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2285	0.2285	3.0000e-005	0.0000	0.2293
Fire Pump - Diesel (50 - 75 HP)	2.5000e-004	8.0000e-004	8.9000e-004	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.1142	0.1142	2.0000e-005	0.0000	0.1146
Total	**7.4000e-004**	**2.4100e-003**	**2.6800e-003**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.3427**	**0.3427**	**5.0000e-005**	**0.0000**	**0.3439**

11.0 Vegetation

Arroyo at Monrovia Station

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	141.22	1000sqft	0.54	166,720.00	0
Other Asphalt Surfaces	23.28	1000sqft	0.53	23,280.00	0
Other Non-Asphalt Surfaces	12.86	1000sqft	0.30	12,860.00	0
Apartments Mid Rise	302.00	Dwelling Unit	1.53	329,955.00	603
Regional Shopping Center	7.08	1000sqft	0.00	7,080.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	427.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia Station - Los Angeles-South Coast County, Summer

Project Characteristics - CO2 and CH4 intensity updated for 2022

Land Use - lot acreage and SF from site plan and project description
Retail footrpint added to residenital footprint

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113 - 'super compliant'

Vehicle Trips - Trip rates obtained from the TIS

Woodstoves - SCAQMD Rule 445

Consumer Products -

Area Coating - SCAQMD Rule 1113 - 'super compliant'

Energy Use - Reduce commercial lighting by 30% per 2019 Cal Green

Solid Waste - Apply 75% waste diversion rate per AB341

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Mobile Land Use Mitigation -

Fleet Mix - No trips associated with HHD; OBUS; UBUS; SBUS; MH. These trips re allocated to LDA

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	10.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	10.00
tblArchitecturalCoating	EF_Parking	100.00	10.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	10.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	10.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	10
tblAreaCoating	Area_EF_Nonresidential_Interior	100	10
tblAreaCoating	Area_EF_Parking	100	10
tblAreaCoating	Area_EF_Residential_Exterior	50	10
tblAreaCoating	Area_EF_Residential_Interior	50	10

tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	55
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	55
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.10	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00

tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblGrading	MaterialExported	0.00	3,430.00
tblLandUse	LandUseSquareFeet	141,220.00	166,720.00
tblLandUse	LandUseSquareFeet	302,000.00	329,955.00
tblLandUse	LotAcreage	3.24	0.54
tblLandUse	LotAcreage	7.95	1.53
tblLandUse	LotAcreage	0.16	0.00
tblLandUse	Population	864.00	603.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	427.1
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	138.92	34.73
tblSolidWaste	SolidWasteGenerationRate	7.43	1.86
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	HO_TTP	40.60	41.00
tblVehicleTrips	HS_TTP	19.20	19.00

tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	3.92
tblVehicleTrips	ST_TR	49.97	28.09
tblVehicleTrips	SU_TR	5.86	3.59
tblVehicleTrips	SU_TR	25.24	14.19
tblVehicleTrips	WD_TR	6.65	4.08
tblVehicleTrips	WD_TR	42.70	24.01
tblWoodstoves	NumberCatalytic	15.10	0.00
tblWoodstoves	NumberNoncatalytic	15.10	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.3601	44.6804	32.0179	0.0797	7.9789	1.2996	9.1332	3.7496	1.2144	4.8145	0.0000	8,343.8082	8,343.8082	1.0757	0.0000	8,370.7006
2020	43.0356	25.5591	30.1188	0.0784	3.8381	1.0102	4.8483	1.0276	0.9672	1.9949	0.0000	7,732.0974	7,732.0974	0.6909	0.0000	7,749.3701
Maximum	**43.0356**	**44.6804**	**32.0179**	**0.0797**	**7.9789**	**1.2996**	**9.1332**	**3.7496**	**1.2144**	**4.8145**	**0.0000**	**8,343.8082**	**8,343.8082**	**1.0757**	**0.0000**	**8,370.7006**

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					
2019	4.3601	44.6804	32.0179	0.0797	3.8929	1.2996	5.0472	1.6641	1.2144	2.7290	0.0000	8,343.8082	8,343.8082	1.0757	0.0000	8,370.7006
2020	43.0356	25.5591	30.1188	0.0784	3.8381	1.0102	4.8483	1.0276	0.9672	1.9949	0.0000	7,732.0974	7,732.0974	0.6909	0.0000	7,749.3701
Maximum	**43.0356**	**44.6804**	**32.0179**	**0.0797**	**3.8929**	**1.2996**	**5.0472**	**1.6641**	**1.2144**	**2.7290**	**0.0000**	**8,343.8082**	**8,343.8082**	**1.0757**	**0.0000**	**8,370.7006**

	ROG	NOx	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**	**34.58**	**0.00**	**29.22**	**43.65**	**0.00**	**30.63**	**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	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.3032	4.0385	32.0273	0.1052	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		10,523.4268	10,523.4268	0.3171		10,531.3544
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**10.5381**	**9.6091**	**59.2376**	**0.1403**	**9.7593**	**0.6415**	**10.4008**	**2.5995**	**0.6358**	**3.2352**	**0.0000**	**17,312.0672**	**17,312.0672**	**0.4897**	**0.1236**	**17,361.1541**

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	lb/day										lb/day					
Area	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.3032	4.0385	32.0273	0.1052	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		10,523.4268	10,523.4268	0.3171		10,531.3544
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**10.5381**	**9.6091**	**59.2376**	**0.1403**	**9.7593**	**0.6415**	**10.4008**	**2.5995**	**0.6358**	**3.2352**	**0.0000**	**17,312.0672**	**17,312.0672**	**0.4897**	**0.1236**	**17,361.1541**

	ROG	NOx	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

Arroyo at Monrovia Station - Los Angeles-South Coast County, Summer

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2019	10/28/2019	5	20	
2	Site Preparation	Site Preparation	10/29/2019	10/31/2019	5	3	
3	Grading	Grading	11/1/2019	11/8/2019	5	6	
4	Building Construction	Building Construction	11/9/2019	9/11/2020	5	220	
5	Paving	Paving	9/12/2020	9/25/2020	5	10	
6	Architectural Coating	Architectural Coating	9/26/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

Residential Indoor: 668,159; Residential Outdoor: 222,720; Non-Residential Indoor: 10,620; Non-Residential Outdoor: 3,540; Striped Parking Area: 12,172 (Architectural Coating – sqft)

OffRoad Equipment

Arroyo at Monrovia Station - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	214.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	429.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	305.00	67.00	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	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2019

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					2.3187	0.0000	2.3187	0.3511	0.0000	0.3511			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017		2,360.7198	2,360.7198	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**2.3187**	**1.2863**	**3.6050**	**0.3511**	**1.2017**	**1.5528**		**2,360.7198**	**2,360.7198**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1006	3.2772	0.6987	8.5500e-003	0.1871	0.0120	0.1991	0.0513	0.0115	0.0628		925.0276	925.0276	0.0637		926.6202
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	0.0649	0.0477	0.6268	1.5800e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		157.6839	157.6839	5.4200e-003		157.8193
Total	**0.1655**	**3.3250**	**1.3256**	**0.0101**	**0.3324**	**0.0133**	**0.3457**	**0.0898**	**0.0127**	**0.1025**		**1,082.7115**	**1,082.7115**	**0.0691**		**1,084.4395**

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					0.8869	0.0000	0.8869	0.1343	0.0000	0.1343			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017	0.0000	2,360.7197	2,360.7197	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**0.8869**	**1.2863**	**2.1732**	**0.1343**	**1.2017**	**1.3360**	**0.0000**	**2,360.7197**	**2,360.7197**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1006	3.2772	0.6987	8.5500e-003	0.1871	0.0120	0.1991	0.0513	0.0115	0.0628		925.0276	925.0276	0.0637		926.6202
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	0.0649	0.0477	0.6268	1.5800e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		157.6839	157.6839	5.4200e-003		157.8193
Total	**0.1655**	**3.3250**	**1.3256**	**0.0101**	**0.3324**	**0.0133**	**0.3457**	**0.0898**	**0.0127**	**0.1025**		**1,082.7115**	**1,082.7115**	**0.0691**		**1,084.4395**

3.3 Site Preparation - 2019

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**1.5908**	**0.8537**	**2.4445**	**0.1718**	**0.7854**	**0.9572**		**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0400	0.0294	0.3857	9.7000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		97.0362	97.0362	3.3300e-003		97.1196
Total	**0.0400**	**0.0294**	**0.3857**	**9.7000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**97.0362**	**97.0362**	**3.3300e-003**		**97.1196**

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					0.6085	0.0000	0.6085	0.0657	0.0000	0.0657			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.6085**	**0.8537**	**1.4622**	**0.0657**	**0.7854**	**0.8511**	**0.0000**	**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0400	0.0294	0.3857	9.7000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		97.0362	97.0362	3.3300e-003		97.1196
Total	**0.0400**	**0.0294**	**0.3857**	**9.7000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**97.0362**	**97.0362**	**3.3300e-003**		**97.1196**

3.4 Grading - 2019

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					6.6170	0.0000	6.6170	3.3773	0.0000	3.3773			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**6.6170**	**1.0730**	**7.6900**	**3.3773**	**0.9871**	**4.3644**		**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6719	21.8992	4.6691	0.0571	1.2501	0.0804	1.3305	0.3427	0.0769	0.4195		6,181.2590	6,181.2590	0.4257		6,191.9014
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	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.7218**	**21.9360**	**5.1513**	**0.0584**	**1.3619**	**0.0813**	**1.4432**	**0.3723**	**0.0778**	**0.4501**		**6,302.5543**	**6,302.5543**	**0.4299**		**6,313.3009**

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					2.5310	0.0000	2.5310	1.2918	0.0000	1.2918			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**2.5310**	**1.0730**	**3.6040**	**1.2918**	**0.9871**	**2.2789**	**0.0000**	**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6719	21.8992	4.6691	0.0571	1.2501	0.0804	1.3305	0.3427	0.0769	0.4195		6,181.2590	6,181.2590	0.4257		6,191.9014
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	0.0500	0.0367	0.4822	1.2200e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		121.2953	121.2953	4.1700e-003		121.3995
Total	**0.7218**	**21.9360**	**5.1513**	**0.0584**	**1.3619**	**0.0813**	**1.4432**	**0.3723**	**0.0778**	**0.4501**		**6,302.5543**	**6,302.5543**	**0.4299**		**6,313.3009**

3.5 Building Construction - 2019

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2784	7.7539	2.0574	0.0175	0.4289	0.0494	0.4784	0.1235	0.0473	0.1708		1,868.0579	1,868.0579	0.1197		1,871.0507
Worker	1.5237	1.1198	14.7060	0.0372	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,699.5063	3,699.5063	0.1271		3,702.6831
Total	**1.8021**	**8.8737**	**16.7634**	**0.0547**	**3.8381**	**0.0788**	**3.9169**	**1.0276**	**0.0744**	**1.1020**		**5,567.5642**	**5,567.5642**	**0.2468**		**5,573.7338**

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2784	7.7539	2.0574	0.0175	0.4289	0.0494	0.4784	0.1235	0.0473	0.1708		1,868.0579	1,868.0579	0.1197		1,871.0507
Worker	1.5237	1.1198	14.7060	0.0372	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,699.5063	3,699.5063	0.1271		3,702.6831
Total	**1.8021**	**8.8737**	**16.7634**	**0.0547**	**3.8381**	**0.0788**	**3.9169**	**1.0276**	**0.0744**	**1.1020**		**5,567.5642**	**5,567.5642**	**0.2468**		**5,573.7338**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2383	7.1270	1.8673	0.0174	0.4289	0.0335	0.4625	0.1235	0.0321	0.1556		1,856.0655	1,856.0655	0.1133		1,858.8970
Worker	1.4036	0.9985	13.3543	0.0360	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,587.1443	3,587.1443	0.1131		3,589.9716
Total	**1.6419**	**8.1255**	**15.2216**	**0.0534**	**3.8381**	**0.0620**	**3.9002**	**1.0276**	**0.0584**	**1.0860**		**5,443.2097**	**5,443.2097**	**0.2264**		**5,448.8687**

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	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2383	7.1270	1.8673	0.0174	0.4289	0.0335	0.4625	0.1235	0.0321	0.1556		1,856.0655	1,856.0655	0.1133		1,858.8970
Worker	1.4036	0.9985	13.3543	0.0360	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,587.1443	3,587.1443	0.1131		3,589.9716
Total	**1.6419**	**8.1255**	**15.2216**	**0.0534**	**3.8381**	**0.0620**	**3.9002**	**1.0276**	**0.0584**	**1.0860**		**5,443.2097**	**5,443.2097**	**0.2264**		**5,448.8687**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0690**	**0.0491**	**0.6568**	**1.7700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**176.4169**	**176.4169**	**5.5600e-003**		**176.5560**

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0690**	**0.0491**	**0.6568**	**1.7700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**176.4169**	**176.4169**	**5.5600e-003**		**176.5560**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**42.7549**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.2807	0.1997	2.6709	7.2000e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		717.4289	717.4289	0.0226		717.9943
Total	**0.2807**	**0.1997**	**2.6709**	**7.2000e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**717.4289**	**717.4289**	**0.0226**		**717.9943**

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	42.5127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**42.7549**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.2807	0.1997	2.6709	7.2000e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		717.4289	717.4289	0.0226		717.9943
Total	**0.2807**	**0.1997**	**2.6709**	**7.2000e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**717.4289**	**717.4289**	**0.0226**		**717.9943**

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	2.3032	4.0385	32.0273	0.1052	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		10,523.4268	10,523.4268	0.3171		10,531.3544
Unmitigated	2.3032	4.0385	32.0273	0.1052	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		10,523.4268	10,523.4268	0.3171		10,531.3544

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,232.16	1,183.84	1084.18	4,112,162	4,112,162
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	169.99	198.88	100.47	355,107	355,107
Total	1,402.15	1,382.72	1,184.65	4,467,269	4,467,269

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
Apartments Mid Rise	14.70	5.90	8.70	40.00	19.00	41.00	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Enclosed Parking with Elevator	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Non-Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Regional Shopping Center	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	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	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
NaturalGas Unmitigated	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084

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					
Apartments Mid Rise	11084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	31.8115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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					
Apartments Mid Rise	11.084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0318115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Unmitigated	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.1150**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.1150**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

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
Emergency Generator	1	0	12	50	0.73	Diesel
Fire Pump	1	0	6	50	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Fire Pump - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

Arroyo at Monrovia Station

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	141.22	1000sqft	0.54	166,720.00	0
Other Asphalt Surfaces	23.28	1000sqft	0.53	23,280.00	0
Other Non-Asphalt Surfaces	12.86	1000sqft	0.30	12,860.00	0
Apartments Mid Rise	302.00	Dwelling Unit	1.53	329,955.00	603
Regional Shopping Center	7.08	1000sqft	0.00	7,080.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	427.1	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Arroyo at Monrovia Station - Los Angeles-South Coast County, Winter

Project Characteristics - CO2 and CH4 intensity updated for 2022

Land Use - lot acreage and SF from site plan and project description
Retail footrpint added to residenital footprint

Demolition -

Grading -

Architectural Coating - SCAQMD Rule 1113 - 'super compliant'

Vehicle Trips - Trip rates obtained from the TIS

Woodstoves - SCAQMD Rule 445

Consumer Products -

Area Coating - SCAQMD Rule 1113 - 'super compliant'

Energy Use - Reduce commercial lighting by 30% per 2019 Cal Green

Solid Waste - Apply 75% waste diversion rate per AB341

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Mobile Land Use Mitigation -

Fleet Mix - No trips associated with HHD; OBUS; UBUS; SBUS; MH. These trips re allocated to LDA

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	10.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	10.00
tblArchitecturalCoating	EF_Parking	100.00	10.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	10.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	10.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	10
tblAreaCoating	Area_EF_Nonresidential_Interior	100	10
tblAreaCoating	Area_EF_Parking	100	10
tblAreaCoating	Area_EF_Residential_Exterior	50	10
tblAreaCoating	Area_EF_Residential_Interior	50	10

tblConstDustMitigation	WaterExposedAreaPM10PercentReduction	61	55
tblConstDustMitigation	WaterExposedAreaPM25PercentReduction	61	55
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.10	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	HHD	0.03	0.00
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	LDA	0.55	0.58
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	MH	8.7600e-004	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	OBUS	2.5150e-003	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00

tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	SBUS	6.8700e-004	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblFleetMix	UBUS	2.2010e-003	0.00
tblGrading	MaterialExported	0.00	3,430.00
tblLandUse	LandUseSquareFeet	141,220.00	166,720.00
tblLandUse	LandUseSquareFeet	302,000.00	329,955.00
tblLandUse	LotAcreage	3.24	0.54
tblLandUse	LotAcreage	7.95	1.53
tblLandUse	LotAcreage	0.16	0.00
tblLandUse	Population	864.00	603.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.033
tblProjectCharacteristics	CO2IntensityFactor	702.44	427.1
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSolidWaste	SolidWasteGenerationRate	138.92	34.73
tblSolidWaste	SolidWasteGenerationRate	7.43	1.86
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	12.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	6.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	HO_TTP	40.60	41.00
tblVehicleTrips	HS_TTP	19.20	19.00

tblVehicleTrips	HW_TTP	40.20	40.00
tblVehicleTrips	ST_TR	6.39	3.92
tblVehicleTrips	ST_TR	49.97	28.09
tblVehicleTrips	SU_TR	5.86	3.59
tblVehicleTrips	SU_TR	25.24	14.19
tblVehicleTrips	WD_TR	6.65	4.08
tblVehicleTrips	WD_TR	42.70	24.01
tblWoodstoves	NumberCatalytic	15.10	0.00
tblWoodstoves	NumberNoncatalytic	15.10	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	4.5374	44.9765	31.0178	0.0779	7.9789	1.2998	9.1347	3.7496	1.2146	4.8159	0.0000	8,231.8922	8,231.8922	1.0917	0.0000	8,259.1842
2020	43.0666	25.6646	29.1875	0.0758	3.8381	1.0108	4.8489	1.0276	0.9677	1.9954	0.0000	7,471.8286	7,471.8286	0.6917	0.0000	7,489.1218
Maximum	**43.0666**	**44.9765**	**31.0178**	**0.0779**	**7.9789**	**1.2998**	**9.1347**	**3.7496**	**1.2146**	**4.8159**	**0.0000**	**8,231.8922**	**8,231.8922**	**1.0917**	**0.0000**	**8,259.1842**

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					
2019	4.5374	44.9765	31.0178	0.0779	3.8929	1.2998	5.0487	1.6641	1.2146	2.7305	0.0000	8,231.8922	8,231.8922	1.0917	0.0000	8,259.1842
2020	43.0666	25.6646	29.1875	0.0758	3.8381	1.0108	4.8489	1.0276	0.9677	1.9954	0.0000	7,471.8286	7,471.8286	0.6917	0.0000	7,489.1218
Maximum	**43.0666**	**44.9765**	**31.0178**	**0.0779**	**3.8929**	**1.2998**	**5.0487**	**1.6641**	**1.2146**	**2.7305**	**0.0000**	**8,231.8922**	**8,231.8922**	**1.0917**	**0.0000**	**8,259.1842**

	ROG	NOx	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**	**34.58**	**0.00**	**29.22**	**43.65**	**0.00**	**30.62**	**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	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.2183	4.3216	30.0788	0.0997	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		9,972.7677	9,972.7677	0.3070		9,980.4414
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**10.4533**	**9.8922**	**57.2892**	**0.1347**	**9.7593**	**0.6415**	**10.4008**	**2.5995**	**0.6358**	**3.2352**	**0.0000**	**16,761.4081**	**16,761.4081**	**0.4796**	**0.1236**	**16,810.2411**

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	lb/day										lb/day					
Area	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Energy	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
Mobile	2.2183	4.3216	30.0788	0.0997	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		9,972.7677	9,972.7677	0.3070		9,980.4414
Stationary	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**10.4533**	**9.8922**	**57.2892**	**0.1347**	**9.7593**	**0.6415**	**10.4008**	**2.5995**	**0.6358**	**3.2352**	**0.0000**	**16,761.4081**	**16,761.4081**	**0.4796**	**0.1236**	**16,810.2411**

	ROG	NOx	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

Arroyo at Monrovia Station - Los Angeles-South Coast County, Winter

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2019	10/28/2019	5	20	
2	Site Preparation	Site Preparation	10/29/2019	10/31/2019	5	3	
3	Grading	Grading	11/1/2019	11/8/2019	5	6	
4	Building Construction	Building Construction	11/9/2019	9/11/2020	5	220	
5	Paving	Paving	9/12/2020	9/25/2020	5	10	
6	Architectural Coating	Architectural Coating	9/26/2020	10/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.37

Residential Indoor: 668,159; Residential Outdoor: 222,720; Non-Residential Indoor: 10,620; Non-Residential Outdoor: 3,540; Striped Parking Area: 12,172 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	5	13.00	0.00	214.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	429.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	305.00	67.00	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	61.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Demolition - 2019

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					2.3187	0.0000	2.3187	0.3511	0.0000	0.3511			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017		2,360.7198	2,360.7198	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**2.3187**	**1.2863**	**3.6050**	**0.3511**	**1.2017**	**1.5528**		**2,360.7198**	**2,360.7198**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1031	3.3210	0.7460	8.4000e-003	0.1871	0.0123	0.1993	0.0513	0.0117	0.0630		909.3392	909.3392	0.0661		910.9925
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	0.0720	0.0529	0.5752	1.4900e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		148.4770	148.4770	5.1100e-003		148.6047
Total	**0.1751**	**3.3738**	**1.3212**	**9.8900e-003**	**0.3324**	**0.0135**	**0.3459**	**0.0898**	**0.0129**	**0.1027**		**1,057.8162**	**1,057.8162**	**0.0712**		**1,059.5972**

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					0.8869	0.0000	0.8869	0.1343	0.0000	0.1343			0.0000			0.0000
Off-Road	2.2950	22.6751	14.8943	0.0241		1.2863	1.2863		1.2017	1.2017	0.0000	2,360.7197	2,360.7197	0.6011		2,375.7475
Total	**2.2950**	**22.6751**	**14.8943**	**0.0241**	**0.8869**	**1.2863**	**2.1732**	**0.1343**	**1.2017**	**1.3360**	**0.0000**	**2,360.7197**	**2,360.7197**	**0.6011**		**2,375.7475**

3.2 Demolition - 2019

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	0.1031	3.3210	0.7460	8.4000e-003	0.1871	0.0123	0.1993	0.0513	0.0117	0.0630		909.3392	909.3392	0.0661		910.9925
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	0.0720	0.0529	0.5752	1.4900e-003	0.1453	1.2500e-003	0.1466	0.0385	1.1500e-003	0.0397		148.4770	148.4770	5.1100e-003		148.6047
Total	**0.1751**	**3.3738**	**1.3212**	**9.8900e-003**	**0.3324**	**0.0135**	**0.3459**	**0.0898**	**0.0129**	**0.1027**		**1,057.8162**	**1,057.8162**	**0.0712**		**1,059.5972**

3.3 Site Preparation - 2019

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854		2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**1.5908**	**0.8537**	**2.4445**	**0.1718**	**0.7854**	**0.9572**		**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0443	0.0325	0.3540	9.2000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		91.3705	91.3705	3.1400e-003		91.4491
Total	**0.0443**	**0.0325**	**0.3540**	**9.2000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**91.3705**	**91.3705**	**3.1400e-003**		**91.4491**

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					0.6085	0.0000	0.6085	0.0657	0.0000	0.0657			0.0000			0.0000
Off-Road	1.7557	21.5386	11.9143	0.0245		0.8537	0.8537		0.7854	0.7854	0.0000	2,426.5408	2,426.5408	0.7677		2,445.7341
Total	**1.7557**	**21.5386**	**11.9143**	**0.0245**	**0.6085**	**0.8537**	**1.4622**	**0.0657**	**0.7854**	**0.8511**	**0.0000**	**2,426.5408**	**2,426.5408**	**0.7677**		**2,445.7341**

3.3 Site Preparation - 2019

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	0.0443	0.0325	0.3540	9.2000e-004	0.0894	7.7000e-004	0.0902	0.0237	7.1000e-004	0.0244		91.3705	91.3705	3.1400e-003		91.4491
Total	**0.0443**	**0.0325**	**0.3540**	**9.2000e-004**	**0.0894**	**7.7000e-004**	**0.0902**	**0.0237**	**7.1000e-004**	**0.0244**		**91.3705**	**91.3705**	**3.1400e-003**		**91.4491**

3.4 Grading - 2019

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					6.6170	0.0000	6.6170	3.3773	0.0000	3.3773			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871		2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**6.6170**	**1.0730**	**7.6900**	**3.3773**	**0.9871**	**4.3644**		**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6887	22.1915	4.9847	0.0562	1.2501	0.0819	1.3320	0.3427	0.0783	0.4210		6,076.4252	6,076.4252	0.4419		6,087.4732
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	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.7441**	**22.2321**	**5.4271**	**0.0573**	**1.3619**	**0.0828**	**1.4447**	**0.3723**	**0.0792**	**0.4515**		**6,190.6383**	**6,190.6383**	**0.4459**		**6,201.7845**

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					2.5310	0.0000	2.5310	1.2918	0.0000	1.2918			0.0000			0.0000
Off-Road	2.0287	22.7444	10.1518	0.0206		1.0730	1.0730		0.9871	0.9871	0.0000	2,041.2539	2,041.2539	0.6458		2,057.3997
Total	**2.0287**	**22.7444**	**10.1518**	**0.0206**	**2.5310**	**1.0730**	**3.6040**	**1.2918**	**0.9871**	**2.2789**	**0.0000**	**2,041.2539**	**2,041.2539**	**0.6458**		**2,057.3997**

3.4 Grading - 2019

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	0.6887	22.1915	4.9847	0.0562	1.2501	0.0819	1.3320	0.3427	0.0783	0.4210		6,076.4252	6,076.4252	0.4419		6,087.4732
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	0.0554	0.0407	0.4425	1.1500e-003	0.1118	9.6000e-004	0.1127	0.0296	8.9000e-004	0.0305		114.2131	114.2131	3.9300e-003		114.3113
Total	**0.7441**	**22.2321**	**5.4271**	**0.0573**	**1.3619**	**0.0828**	**1.4447**	**0.3723**	**0.0792**	**0.4515**		**6,190.6383**	**6,190.6383**	**0.4459**		**6,201.7845**

3.5 Building Construction - 2019

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449		2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**		**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2904	7.7643	2.2678	0.0170	0.4289	0.0503	0.4792	0.1235	0.0481	0.1716		1,817.5566	1,817.5566	0.1277		1,820.7487
Worker	1.6890	1.2401	13.4955	0.0350	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,483.4990	3,483.4990	0.1198		3,486.4949
Total	**1.9794**	**9.0044**	**15.7633**	**0.0520**	**3.8381**	**0.0797**	**3.9178**	**1.0276**	**0.0752**	**1.1028**		**5,301.0556**	**5,301.0556**	**0.2475**		**5,307.2436**

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	2.5581	18.9103	15.2545	0.0250		1.0901	1.0901		1.0449	1.0449	0.0000	2,312.1454	2,312.1454	0.4810		2,324.1705
Total	**2.5581**	**18.9103**	**15.2545**	**0.0250**		**1.0901**	**1.0901**		**1.0449**	**1.0449**	**0.0000**	**2,312.1454**	**2,312.1454**	**0.4810**		**2,324.1705**

3.5 Building Construction - 2019

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	0.2904	7.7643	2.2678	0.0170	0.4289	0.0503	0.4792	0.1235	0.0481	0.1716		1,817.5566	1,817.5566	0.1277		1,820.7487
Worker	1.6890	1.2401	13.4955	0.0350	3.4092	0.0294	3.4386	0.9041	0.0271	0.9312		3,483.4990	3,483.4990	0.1198		3,486.4949
Total	**1.9794**	**9.0044**	**15.7633**	**0.0520**	**3.8381**	**0.0797**	**3.9178**	**1.0276**	**0.0752**	**1.1028**		**5,301.0556**	**5,301.0556**	**0.2475**		**5,307.2436**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2491	7.1255	2.0595	0.0169	0.4289	0.0341	0.4630	0.1235	0.0326	0.1561		1,805.3087	1,805.3087	0.1207		1,808.3267
Worker	1.5586	1.1055	12.2308	0.0339	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,377.6322	3,377.6322	0.1065		3,380.2937
Total	**1.8077**	**8.2310**	**14.2903**	**0.0508**	**3.8381**	**0.0626**	**3.9007**	**1.0276**	**0.0589**	**1.0865**		**5,182.9409**	**5,182.9409**	**0.2272**		**5,188.6204**

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	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	0.2491	7.1255	2.0595	0.0169	0.4289	0.0341	0.4630	0.1235	0.0326	0.1561		1,805.3087	1,805.3087	0.1207		1,808.3267
Worker	1.5586	1.1055	12.2308	0.0339	3.4092	0.0285	3.4377	0.9041	0.0263	0.9304		3,377.6322	3,377.6322	0.1065		3,380.2937
Total	**1.8077**	**8.2310**	**14.2903**	**0.0508**	**3.8381**	**0.0626**	**3.9007**	**1.0276**	**0.0589**	**1.0865**		**5,182.9409**	**5,182.9409**	**0.2272**		**5,188.6204**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0767**	**0.0544**	**0.6015**	**1.6700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**166.1131**	**166.1131**	**5.2400e-003**		**166.2440**

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	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.1389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2935**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

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	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0767**	**0.0544**	**0.6015**	**1.6700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**166.1131**	**166.1131**	**5.2400e-003**		**166.2440**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	42.5127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**42.7549**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.3117	0.2211	2.4462	6.7800e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		675.5264	675.5264	0.0213		676.0587
Total	**0.3117**	**0.2211**	**2.4462**	**6.7800e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**675.5264**	**675.5264**	**0.0213**		**676.0587**

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	42.5127					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**42.7549**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

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	0.3117	0.2211	2.4462	6.7800e-003	0.6818	5.7000e-003	0.6875	0.1808	5.2500e-003	0.1861		675.5264	675.5264	0.0213		676.0587
Total	**0.3117**	**0.2211**	**2.4462**	**6.7800e-003**	**0.6818**	**5.7000e-003**	**0.6875**	**0.1808**	**5.2500e-003**	**0.1861**		**675.5264**	**675.5264**	**0.0213**		**676.0587**

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	2.2183	4.3216	30.0788	0.0997	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		9,972.7677	9,972.7677	0.3070		9,980.4414
Unmitigated	2.2183	4.3216	30.0788	0.0997	9.7593	0.0765	9.8358	2.5995	0.0708	2.6702		9,972.7677	9,972.7677	0.3070		9,980.4414

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,232.16	1,183.84	1084.18	4,112,162	4,112,162
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	169.99	198.88	100.47	355,107	355,107
Total	1,402.15	1,382.72	1,184.65	4,467,269	4,467,269

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
Apartments Mid Rise	14.70	5.90	8.70	40.00	19.00	41.00	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Enclosed Parking with Elevator	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Other Non-Asphalt Surfaces	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	0.000000	0.000000
Regional Shopping Center	0.583458	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.000000	0.000000	0.000000	0.005142	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	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084
NaturalGas Unmitigated	0.1199	1.0246	0.4373	6.5400e-003		0.0828	0.0828		0.0828	0.0828		1,307.7372	1,307.7372	0.0251	0.0240	1,315.5084

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					
Apartments Mid Rise	11084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	31.8115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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					
Apartments Mid Rise	11.084	0.1195	1.0215	0.4347	6.5200e-003		0.0826	0.0826		0.0826	0.0826		1,303.9946	1,303.9946	0.0250	0.0239	1,311.7436
Enclosed Parking with Elevator	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
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
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0318115	3.4000e-004	3.1200e-003	2.6200e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004		3.7425	3.7425	7.0000e-005	7.0000e-005	3.7648
Total		**0.1199**	**1.0246**	**0.4373**	**6.5400e-003**		**0.0828**	**0.0828**		**0.0828**	**0.0828**		**1,307.7372**	**1,307.7372**	**0.0251**	**0.0240**	**1,315.5084**

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	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913
Unmitigated	8.1150	4.5460	26.7731	0.0285		0.4822	0.4822		0.4822	0.4822	0.0000	5,480.9032	5,480.9032	0.1476	0.0997	5,514.2913

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.1150**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1165					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.7452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4983	4.2582	1.8120	0.0272		0.3443	0.3443		0.3443	0.3443	0.0000	5,436.0000	5,436.0000	0.1042	0.0997	5,468.3034
Landscaping	0.7551	0.2878	24.9611	1.3200e-003		0.1379	0.1379		0.1379	0.1379		44.9032	44.9032	0.0434		45.9879
Total	**8.1150**	**4.5460**	**26.7731**	**0.0285**		**0.4822**	**0.4822**		**0.4822**	**0.4822**	**0.0000**	**5,480.9032**	**5,480.9032**	**0.1476**	**0.0997**	**5,514.2913**

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
Emergency Generator	1	0	12	50	0.73	Diesel
Fire Pump	1	0	6	50	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Fire Pump - Diesel (50 - 75 HP)	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

11.0 Vegetation

C2
HEALTH RISK ASSESSMENT REPORT

Arroyo at Monrovia Station Specific Plan

Operational Health Risk Assessment

February 27, 2019

Prepared for:

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This document is formatted for double-sided printing to conserve natural resources.

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List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
AERMOD	American Meteorological Society/U.S. EPA Regulatory Model
AMSL	Above Mean Sea Level
ASF	Age Sensitivity Factor
CA	California
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CPF	Cancer Potency Factor
DPM	Diesel Particulate Matter
EA	Environmental Assessment
ED	Exposure Duration
EF	Exposure Frequency
EMFAC	Emission Factors Model
FAH	Fraction of Time at Home
HAP	Hazardous Air Pollutants
HARP	Hot Spots Analysis and Reporting Program
HHDT	Heavy Heavy-Duty Truck
HR	Hour
HRA	Health Risk Assessment
kg	Kilogram
KSF	Thousand Square Feet
L	Liter
LHDT	Light Heavy-Duty Truck
m^3	Cubic Meter
MEIR	Maximally Exposed Individual Resident
MEIW	Maximally Exposed Individual Worker
mg	Milligram
MHDT	Medium Heavy-Duty Truck
MPH	Miles Per Hour
OEHHA	Office of Environmental Health Hazard Assessment
PM	Particulate Matter
PMI	Point of Maximum Impact
PM_{10}	Coarse Particulate Matter
RAST	Risk Assessment Stand Alone Tool

List of Acronyms, Abbreviations, and Symbols	
Acronym / Abbreviation	**Full Phrase or Description**
REL	Reference Exposure Level
SCAQMD	South Coast Air Quality Management District
SRA	Source Receptor Area
TAC	Toxic Air Contaminants
U.S. EPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
V.	Version
WAF	Worker Adjustment Factor
µg	Micrograms
§	Section
° F	Degrees Fahrenheit

EXECUTIVE SUMMARY

This Operational Health Risk Assessment Report (Report) evaluates and documents the potential health risks posed by Interstate 210 emissions on the proposed Arroyo at Monrovia Station Specific Plan (proposed Project) in the City of Monrovia, Los Angeles County, California 90025. The proposed Project is located within approximately 500 feet of the I-210.

This Report is consistent with the guidance and recommendations contained in the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act (CEQA) *Air Quality Handbook*, as amended and supplemented (SCAQMD, 2017), SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions* (SCAQMD, 2003), and the California Office of Environmental Health Hazard Assessment's (OEHHA) *Air Toxics Hot Spots Program Guidance Manual* (OEHHA, 2015). This Report is intended to assist the CEQA Lead Agency (City of Monrovia) with its review of potential Project-related air quality impacts in compliance with the State CEQA Statutes and Guidelines, particularly in respect to the air quality issues identified in Appendix G of the State CEQA Guidelines.

S.1 PROPOSED PROJECT DESCRIPTION

Evergreen Investment Partner, LLA is proposing to develop an approximately 302-unit, six-story apartment complex and an seven level (six-story) partially underground parking structure. The apartment complex would also contain 7,080 sf of retail space. The proposed retail/flex space is planned as retail space but is proposed to be allowed to be re-purposed for eight (8) of the 302 units if leasing of the retail space does not occur. The proposed mixed-use development would be located on approximately 2.90 acres, located at the northwest corner of the City-designated Station Square Transit Village bounded by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west.

The proposed Project would be located in close proximity to the I-210. The I-210 is located approximately 150 feet to the north of the site at its closest point. The freeway carries vehicle traffic that generate emissions of diesel particulate matter, or DPM, a pollutant identified by the California Air Resources Board as a toxic air contaminant (TAC). The proposed Project will include sensitive receptors (inhabitants of the residential units) that will be exposed to DPM from the I-210.

S.2 RISK ASSESSMENT

The proposed Project's potential exposure to DPM emissions (e.g., pounds per year, grams per second, etc.) from the I-210 Freeway was estimated using EMFAC2017 emission factors and California Department of Transportation (CalTrans) traffic data. The U.S. Environmental Protection Agency (U.S. EPA)- and SCAQMD-approved **A**merican Meteorological Society/**E**nvironmental Protection Agency **R**egulatory **Mod**el (AERMOD, V. 18081) was used to predict pollutant concentrations at the boundary of the Project site. The AERMOD dispersion model simulates the dispersion of pollutant emissions and estimates ground level concentrations of pollutants at specified receptor locations. Predicted ground level concentrations of DPM were then assessed for potential health risks in accordance with SCAQMD and OEHHA methodologies.

The results of the operational health risk assessment (HRA) indicate the maximally exposed individual resident, or MEIR, is located at the northeastern corner of the Project site, where residential units will be located on the ground floors. The incremental increase in cancer risk at this location is 28.2 in one

million, which is above the SCAQMD's recommended significance threshold of 10 in one million. In addition, based on the results of the dispersion modeling, the annual average concentration of DPM at MEIR is 0.041 micrograms per cubic meter, resulting in a non-carcinogenic health hazard index of 0.01, which is below the SCAQMD's recommended significance threshold of 1.

The modeled point of maximum impact, or PMI, is located northwest of the proposed site, in the freeway right-of-way. This point is not an occupied receptor location. Cancer risks, therefore, were not estimated at the PMI.

Finally, the HRA indicates the population-wide cancer burden is 0.05, which is below the SCAQMD threshold of 0.5.

1 INTRODUCTION

Evergreen Investment Partners, LLA has submitted an application to the City of Monrovia for its proposed Arroyo at Monrovia Station Specific Plan (proposed Project). The proposed Project would be located on approximately 2.90 acres in the City of Monrovia, Los Angeles County, at the northwest corner of the City-designated Station Square Transit Village. The Project site is bounded by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west. The proposed transit-oriented, infill, mixed-use development would be comprised of an approximately 302-unit, six story apartment complex, an seven-level (six-story) partially underground parking structure, and 7,080 sf of retail space. Project development and operation would expose sensitive receptors (future residents of the development) to emissions from diesel-powered vehicles (trucks, motorcycles, recreational vehicles, and buses) travelling along the I-210 Freeway, which is located approximately 130 feet to the north of the site.

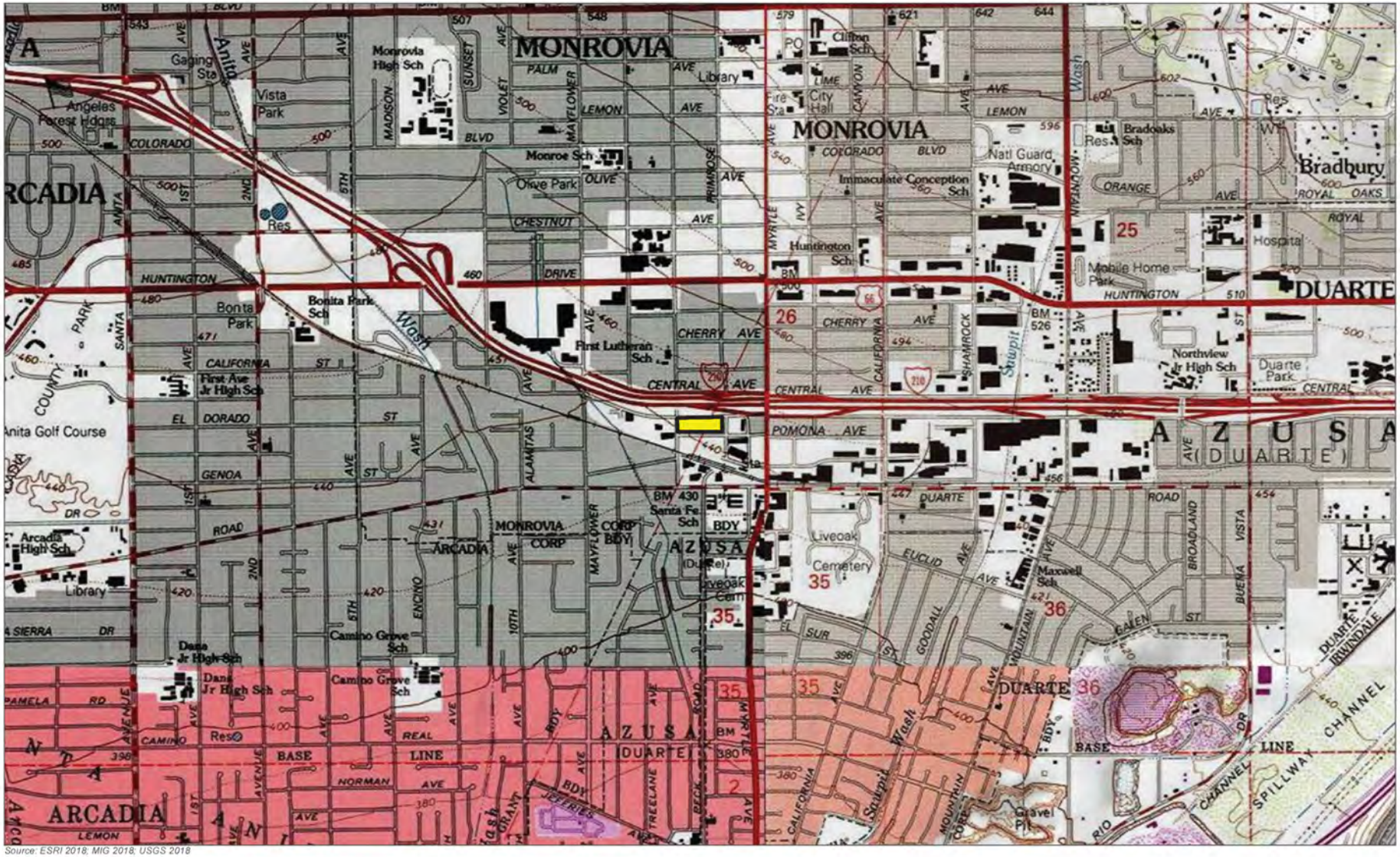
MIG, Inc. (MIG) has prepared this Operational Health Risk Assessment Report (Report) at the request of Evergreen Investment Partners. This Report evaluates the potential health risks of the proposed Project using Project-specific information contained in the Evergreen Investment Partner's permit application. Where necessary, MIG has supplemented available information with standardized sources of information, such as model assumptions pertaining to emission factors and SCAQMD-recommendations for idling time. In general, this Report evaluates the potential "worst-case" conditions associated with the I-210 Freeway's emissions levels to ensure a conservative (i.e., likely to overestimate) assessment of cancer risk, annual average concentration of DPM, non-carcinogenic health hazard index, and population-wide cancer burden.

This Report is intended for use by the Lead Agency to assess the potential operational health risk impacts of the proposed Project in compliance with the California Environmental Quality Act (CEQA; PRC §21000 et seq.) and the State CEQA Guidelines (14 CCR §15000 et seq.), particularly in respect to the air quality issues identified in Appendix G of the State CEQA Guidelines. This report does not make determinations of significance pursuant to CEQA because such determinations are solely the purview of the Lead Agency.

1.1 REPORT ORGANIZATION

This Report is organized as follows:

- **Chapter 1, Introduction,** explains the contents of this Report and its intended use.
- **Chapter 2, Project Description and Emissions Sources,** provides pertinent information on the proposed Project and its surroundings, as well as its emission sources and the dispersion model parameters used to assess potential health risks.
- **Chapter 3, Risk Assessment**, provides the methodology and results of the proposed Project's operational health risk assessment.
- **Chapter 4, Report Preparers and References,** list the individuals involved, and the references used, in the preparation of this Report.



Source: ESRI 2018; MIG 2018; USGS 2018

Figure 1-1: Regional Location Map

The Arroyo at Monrovia Station Project

2 PROJECT DESCRIPTION AND EMISSIONS SOURCES

This chapter provides information on the proposed Project and its surroundings, as well as its emissions sources and the dispersion modeling parameters used to assess potential health risks.

2.1 ENVIRONMENTAL SETTING

Air quality is a function of pollutant emissions and topographic and meteorological influences. The amount of pollutants emitted into the air and the physical features and atmospheric conditions of a geographic region interact to affect the movement and dispersion of pollutants and determine the quality of its air.

The proposed Project is located on West Evergreen Avenue in the City of Monrovia, in southeastern Los Angeles County, within the South Coast Air Basin (see Figure 1-1). The South Coast Air Basin includes Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties.

Southeast Los Angeles County and the broader Los Angeles Basin are defined by a semi-arid, Mediterranean climate with mild winters and warm summers. The San Gabriel, San Bernardino, and San Jacinto Mountains bound the Basin to the north and east trap ambient air and pollutants within the Los Angeles and Inland Empire valleys below.

Near the City of Monrovia, the predominant wind direction is from the south and southwest, although Santa Ana winds come from the north or north east, usually during the fall and winter.

2.2 FACILITY DESCRIPTION

Evergreen Investment Partners is proposing to develop the Arroyo at Monrovia Station Specific Plan. The proposed Project would consist of development of a transit-oriented, infill, mixed-use development with residential and commercial uses. The residential component consists of 302 apartment units. The development will be six stories in height. The apartment complex would also contain 7,080 sf of retail space. The proposed retail/flex space is planned as retail space but is proposed to be allowed to be re-purposed for eight (8) of the 302 units if leasing of the retail space does not occur. Three (3) of the proposed units would comprise live/work units. A range of studios, and one-bedroom and two-bedroom apartments are proposed. Other tenant amenities include a pool, a pet spa, bike “kitchen” (i.e., bicycle repair area), tenant lounge, centralized mail/package delivery room, and a golf simulation room. The project will also include the development of a seven level (six-story), 500 space parking structure that is partially underground. In total, the Project site comprises approximately 2.90 acres of land centered on 407435 Easting and 3777531 Northing (Universal Transverse Mercator Zone 11 S).

2.2.1 Local Land Use and Topography

The proposed Project site consists of lands designated and zoned as "Planned Development" (PD-12) by the City of Monrovia General Plan and Zoning Code. The Project site is bound by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west. West Evergreen Avenue is a frontage road for the I-210 Freeway. Surrounding lands generally consist of a mix of industrial, commercial, and residential uses (see Figure 2-1).

Elevations in the City of Monrovia range from approximately 600 feet above mean sea level (AMSL) in the southern part of the City to approximately 900 feet AMSL in the northern part of the City, with hills and ridges that reach above 1,100 feet AMSL. Elevations at the proposed Project site range from approximately 430 to 440 feet AMSL.

Some populations are more susceptible to the effects of air pollution than the population at large; these populations are defined as sensitive air quality receptors. Sensitive receptors include children, the elderly, the sick, and the athletic. Land uses associated with sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The proposed Project includes residential dwelling units and therefore would result in the placement of sensitive residential receptors in close proximity to the I-210.

2.2.2 Project Site Plan

The site plan for the proposed Project is shown in Figure 2-1.

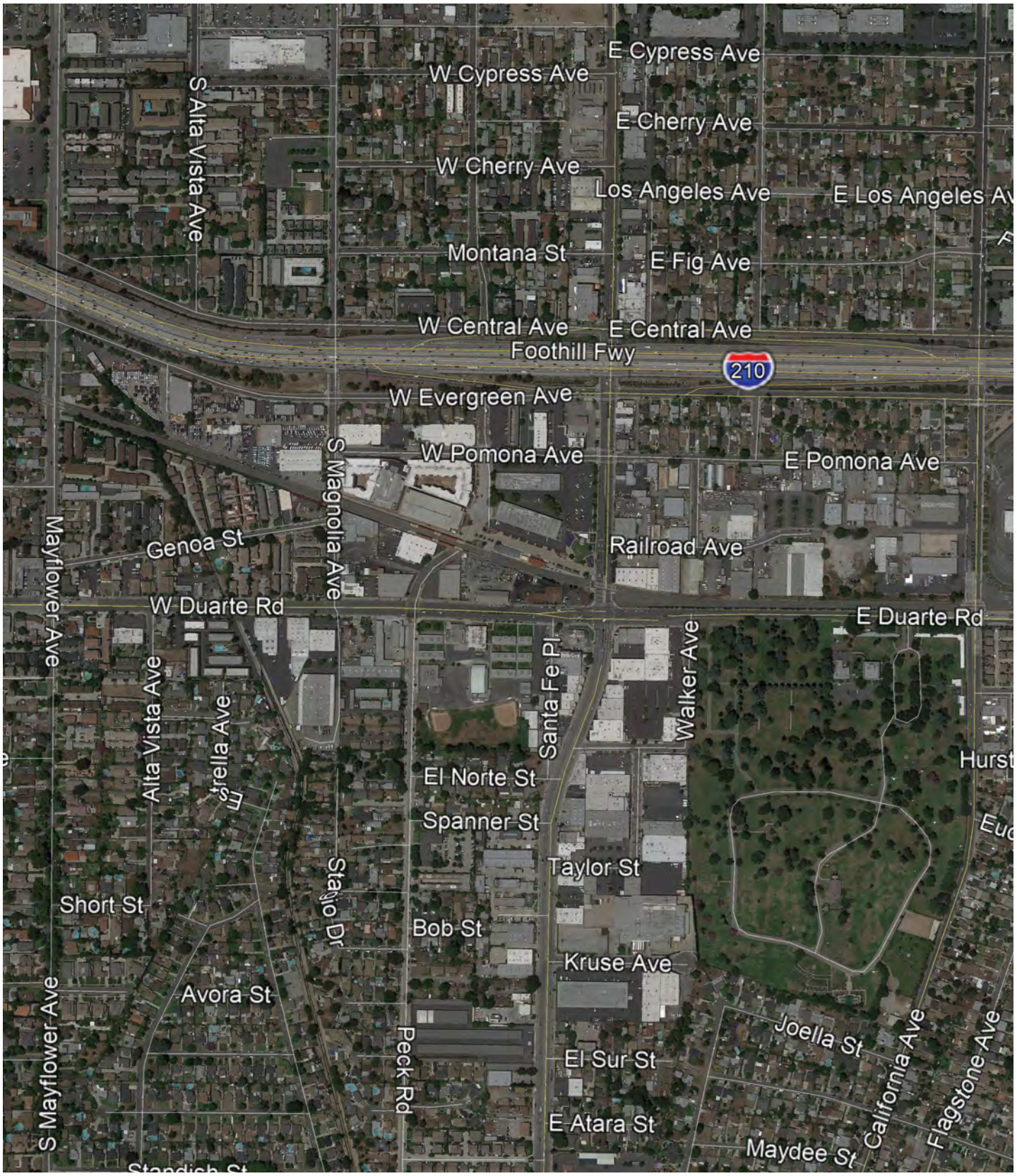
2.3 EMISSION SOURCES

The proposed Project would be exposed to emissions of DPM from vehicles travelling along the I-210 freeway in both directions. Diesel vehicles include trucks, motorcycles, recreational vehicles, and buses[1].

2.3.1 Hazard Identification

DPM is the exhaust from diesel engines. It includes hundreds of different gaseous and particulate components, many of which are toxic. Many of the toxic compounds adhere to the particles, and because diesel particles are very small (less than 2.5 microns in diameter), they can penetrate deeply into the lungs. The California Air Resources Board designated DPM a toxic air contaminant in 1998 because of its potential to cause cancer, premature deaths, and other health problems. The potential health hazards associated with DPM are especially concerning for children because their lungs are still developing, and the elderly, who may have other serious health problems that can be exacerbated by DPM. Health risks from DPM occur exclusively through the inhalation pathway.

[1] Gasoline and diesel-fueled vehicles travelling on the I-210 would emit other TACs besides DPM; however, these other TACs would be emitted in much lower quantities than DPM. Accordingly, this analysis focuses on the risk from DPM emitted by vehicles travelling on the I-210 as an overall indicator of potential adverse health risks from mobile sources operating near the site.



Source: ©2019 Google

Figure 2-1: Aerial View of Project Area

The Arroyo at Monrovia Station Project

2.3.2 Modeled I-210 Sources and Emissions Rates

Emissions from the I-210 were modeled as a polygon-area source, as shown in Table 2-1. The area source representing the freeway was extended approximately 1,000 feet to the west and east of the Project area boundary to capture emissions emanating from the I-210 both adjacent and in close proximity to the Project area. The total length of the I-210 modeled was approximately 3,800 feet, or 0.64 miles.

Table 2-1: Modeled I-210 Emissions Source Location

Source ID	Description	UTM Coordinates (Zone 11N)(A)		Size (m^2)
		Easting	Northing	
PAREA1	I-210 Freeway Travel Lanes	406923.15	3777692.99	46,564.8

Source: MIG 2019 (see Appendix C)
Coordinates are for the southwest corner of the source.

Consistent with SCAQMD recommendations, PM_{10} exhaust from diesel vehicles travelling along the I-210 was evaluated in the HRA. The emission rate for the segment of I-210 modeled in the operational HRA was derived from diesel vehicle emission factors and vehicle population data contained in CARB's EMFAC model and annual average daily traffic volume data available from Caltrans. Using EMFAC data (for the Los Angeles South Coast Sub-Area), an average diesel emission factor, in terms of grams per mile, was developed for each vehicle class, based on a speed of 55 miles per hour (MPH) for school buses and 65 MPH for all other vehicle types. Then the population percentage for each vehicle class was multiplied by the annual average daily trips (AADT) for the segment of I-210 adjacent to the Project area, between Huntington Drive and South Myrtle Avenue (252,000 vehicles), to determine the total amount of diesel vehicles traveling adjacent to the Project area[2]. This diesel vehicle estimate was then multiplied by the total segment length (0.64 miles) to determine the total miles travelled by each vehicle class. The total miles travelled were then multiplied by the average emission factor to determine total diesel vehicle emissions emitted from the modeled portion of I-210. Table 2-2 summarizes the average emission factors, vehicle class population percentage, vehicle miles traveled, and total diesel emissions occurring within the modeled source.

[2] According to Caltrans' traffic data (Caltrans 2017), the annual average daily traffic (AADT) volume east of Myrtle Avenue is 252,000 vehicles while the AADT west of Myrtle Avenue is 246,000 vehicles. This Report uses the higher AADT value (252,000 vehicles) for the segment of the I-210 modeled (both east and west of Myrtle Avenue).

Table 2-2: PM_{10} Emission Factors

Vehicle Class	2022 - 2050 Average PM10 Emission Factor (Grams/Mile)(A)	2022 Diesel Vehicle Population(B)	Vehicle Population Percentage(B)	I-210 ADT	Class Vehicles on I-210(C)	Trip Length (miles)	Total Daily Class Miles(D)	Total Daily PM_{10} (Grams)(E)	Total Daily PM_{10} (Grams/Sec)(F)
LDA	0.001852246	34,751	0.46%	252,000	1,157	0.64	741	1.371969646	1.58793E-05
LDT1	0.03185804	271	0.00%	252,000	9	0.64	6	0.183784701	2.12714E-06
LDT2	0.003402849	8,920	0.12%	252,000	297	0.64	190	0.647004967	7.48848E-06
LHDT1	0.00623252	64,097	0.85%	252,000	2,135	0.64	1,366	8.51500031	9.85532E-05
LHDT2	0.010840485	25,927	0.34%	252,000	863	0.64	553	5.99084265	6.93385E-05
HHDT	0.034086662	56,923	0.75%	252,000	1,896	0.64	1,213	41.3576665	0.000478677
MDV	0.001443049	19,517	0.26%	252,000	650	0.64	416	0.600300399	6.94792E-06
MH	0.040468538	5,865	0.08%	252,000	195	0.64	125	5.059293149	5.85566E-05
MHDT	0.016485717	64,993	0.86%	252,000	2,165	0.64	1,385	22.83800335	0.000264329
OBUS	0.024065833	3,064	0.04%	252,000	102	0.64	65	1.57165885	1.81905E-05
SBUS	0.018773815	3,460	0.05%	252,000	115	0.64	74	1.384618376	1.60257E-05
UBUS	0.004388309	10	0.00%	252,000	0	0.64	0	0.000948352	1.09763E-08
ALL DSL	0.014593326	287,799	3.80%	252,000	9,585	0.64	6,134	89.52109125	0.001036124

Source: EMFAC2017 and Caltrans 2017. See Appendix A.

(A) Emission factors represent the average emission factor for the vehicle class over the 2022 to 2050 time period. Emission factors are reported for a speed of 55 miles per hour for school buses (SBUS) and 65 miles per hour for all other vehicle classes.

(B) Population and population percentage reflects the proportion of each vehicle class out of the total amount of vehicles in the Los Angeles (South Coast) sub-area.

(C) Class vehicle amounts are estimated by multiplying the vehicle population percentage times 252,000 (the AADT on I-210).

(D) Total daily vehicle miles travelled is estimated by multiplying class vehicles times trip length (i.e., distance traveled in the modeled source).

(E) Total daily emissions are estimated by multiplying the vehicle miles travelled by the average emission factor.

(F) Grams per second is derived based on 86,400 seconds per day.

The release height for the modeled source was set to 3.28 meters to approximate an average of height of all vehicle exhaust sources.

2.4 DISPERSION MODEL

The US EPA's AERMOD dispersion model (Version 18081) was used to predict DPM concentrations at the Project boundary. The AERMOD dispersion model is the US EPA- and SCAQMD-approved model for simulating the dispersion of pollutant emissions and estimating ground level concentrations of pollutants at specified receptor locations. AERMOD requires the user to input information on the source(s) of pollutants being modeled, the receptors where pollutant concentrations are modeled, and the meteorology, terrain, and other factors that affect the potential dispersion of pollutants. These variables are described below and shown in detail in Appendix C.

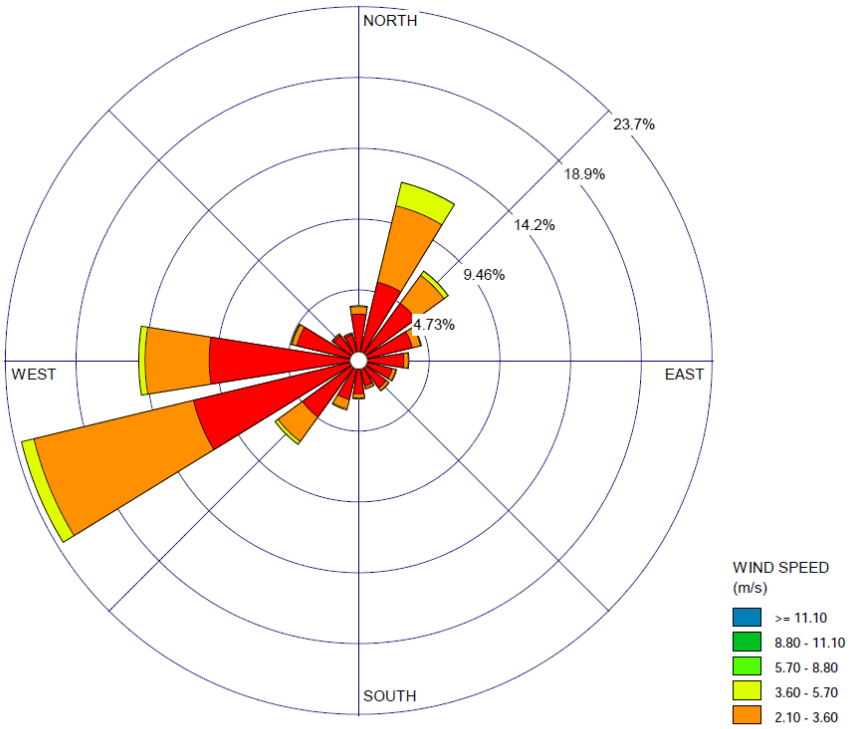
2.4.1 Modeled Sources/Emissions Rates

The proposed Project's emissions sources and source emission rates, location, and type are described in Section 2.3.2.

2.4.2 Meteorological Data Inputs

AERMOD requires meteorological data as an input into the model. The meteorological data is processed using AERMET, a pre-processor to AERMOD. AERMET requires surface meteorological data, upper air meteorological data, and surface parameter data such as albedo (reflectivity) and surface roughness. For the proposed project, pre-processed surface data from the SCAQMD was obtained for the Azusa meteorological station, the closest meteorological station to the proposed Project site. Five complete years of meteorological data from January 2012 to December 2016 were utilized; the SCAQMD data set incorporates the U.S. EPA's option for adjusted surface friction velocity factors (μ*) under low and stable wind conditions. Emissions were presumed to be generated 24-hours per day. The wind rose for the Azusa meteorological station data set is shown in Figure 2-2.

Figure 2-2 Wind Rose for Azusa Meteorological Station



2.4.3 Terrain Inputs

Terrain was incorporated by using AERMAP (an AERMOD pre-processer) to import the elevation of the project site using data from the National Elevation Dataset with a resolution of 1/3 arcsecond.

2.4.4 Modeled Receptors

Emissions were modeled in a multiple-tier fenceline grid. The first tier consisted of 5-meter spacing from the fenceline for a distance of 25 meters; the second tier consisted of 100-meter spacing for an additional distance of 400 meters. Primary and intermediate receptors were also spaced every 5 meters along the fenceline. The receptor grids were then converted to discrete Cartesian receptors (2,490 in total). Receptors were modeled at a height of 0.0 meters (i.e., ground level) and 10.0 meters (i.e., upper floors) above the ground.

3 Risk Assessment

Cancer risk and non-cancer health risks to sensitive receptors on the proposed Project site were estimated using the U.S. EPA's AERMOD dispersion model and recommendations contained in the SCAQMD's *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions* white paper and *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics Hot Spots Information and Assessment Act,* as well as the OEHHA *Air Toxics Hot Spots Program Guidance Manual*.

The SCAQMD has developed significance thresholds applicable to TAC emissions emanating from stationary and mobile sources. Under SCAQMD methodology, health risks from TAC emissions are estimated based on "Individual Cancer Risk," which is the likelihood that a person exposed to TACs over 70-year lifetime will get cancer. The SCAQMD recommends preparation of a Health Risk Assessment (HRA) for large commercial or industrial projects to determine the specific health risks posed by long-term project emissions. Numerous weighting factors (e.g., age sensitivity factors, breathing rates, etc.) are applied during health risk calculations to account for those members of the public who may be more sensitive to pollution than others. A project is considered to have a significant impact if it results in any of the following:

- A maximum incremental cancer risk greater than equal to 10 in one million;
- A population wide cancer burden greater than 0.5 (in areas were cancer risk is greater than or equal to 1 in one million); or
- A chronic or acute hazard index greater than or equal to 1.0.

3.1 CANCER RISK

Cancer risk is the calculated, pollutant-specific estimated probability of developing cancer based upon the dose and exposure to the TAC. Cancer risk is determined by calculating the combinatory effects of the cancer potency factor (CPF) when inhaling the toxic, the daily inhalation dose, the age group the receptor is cohort to, the duration of exposure over a lifetime (30 years), and other factors such as age sensitivity and the amount of time spent at the location of exposure. For the proposed Project, risks were assessed for the inhalation pathway (i.e., breathing) for residential receptors. Cancer risk equations for residential receptors are summarized in Table 3-1 and Table 3-2.

Table 3-1: Cancer Risk Equations	
Equation 1 - Residential Risk:	$RISK_{INH.RES} = DOSE_{AIR.RES} \times CPF \times ASF \times \frac{ED}{AT} \times FAH$
Where:	
$DOSE_{AIR}$ =	Daily Inhalation Dose (mg/kg-day). See Table 3-2.
CPF =	Cancer Potency Factor for Inhalants (mg/kg-day). CPF is expressed as the 95th percent upper confidence limit of the slope of the dose response curve under continuous lifetime exposure conditions. The CPF for diesel exhaust is 1.1 mg/kg-day.
ASF =	Age Sensitivity Factor. ASF is a protective coefficient intended to take into account increased susceptibility to long-term health effects from early-life exposure to TACs. The recommended ASFs are 10 for the third-trimester to birth and two-year age bins, three for the two-year to nine-year and 16-year age bins, and one for receptors over 16 years of age.
ED =	Exposure Duration (years). Exposure duration characterizes the length of residency (30 Years) or employment (25 Years) of the receptor.
AT =	Averaging Time (years). A 70-year (lifetime) averaging time is used to characterize to total risk as a factor of average risk over a typical lifespan.
FAH =	Fraction at Home. FAH is the percentage of time the receptor is physically at the receptor location. The recommended percentages are 85 percent for the third-trimester to birth and two-year age bins, 72 percent for the two-year to nine-year and 16-year age bins, and 73 for receptors over 16 years of age.

Table 3-2: Inhalation Dose Equations	
Residential Dose	$DOSE_{AIR.RES} = C_{AIr} \times \frac{BR}{BW} \times A \times EF \times 10^{-6}$
Where:	
C_{AIR} =	Concentration of TAC in air (µg/m^3). Concentration of toxic in micrograms per one cubic meter of air. The AERMOD program is used in the study to determine concentrations of diesel particulate matter at surrounding discrete and grid receptor points.
BR/BW =	Breathing Rate ÷ Body Weight (L/kg/day). Daily breathing rate normalized to body weight. The 95th percentile breathing rate to body weight ratios are used in this study with a recommended 361 L/kg/day for the third-trimester to birth age bin, 1,090 L/kg/day for the birth to two-years age bin, 861 L/kg/day for the two-years to nine-years age bin, 745 for the two-years to 16-years age bin, 335 L/kg/day for the 16-years to 30-years age bin, and 290 L/kg/day for the 16-years to 70-years age bin.
A =	Inhalation Absorption Factor. Is a coefficient that reflects the fraction of chemical absorbed in studies used in the development of CPF and Reference Exposure Levels (RELs). An absorption factor of one is recommended for all chemicals.
EF =	Exposure Frequency. EF is the ratio of days in a year that a receptor is receiving the dose. The recommended EF is 0.96 characterizing an assumed 350 days a year that a residential receptor is home for some portion of the day.

Cancer risk was assessed for the maximally exposed individual resident (MEIR) over a 30-year exposure duration (that characterizes the maximum residency tendency in California). Residential risk calculations account for presumed sensitivity to carcinogens and differences in intake rates for the third-

trimester to birth, birth to two-years, two-years to nine-years, two-years to 16-years, and 16-year to 30-years age bins.

Concentrations were modeled using AERMOD and then input into CARB's Hot Spots and Reporting Program (HARP2) Health Risk Assessment Standalone Tool (RAST) to calculate cancer risk based on the methods and recommendations found in the OEHHA HRA Guidelines. The RAST intake rate percentile was set to the 95th percentile and the FAH factor was applied to age bins less than 16 years. The resulting annual average DPM concentration and corresponding excess cancer risk at the PMI and MEIR are summarized in Table 3-3. The PMI is located off-site, in the I-210 Freeway right-of-way, and would not be occupied by residential receptors; cancer risks at this location, therefore, were not estimated. The ground-level MEIR is located on the northeast corner of the proposed Project site, and the upper-floor MEIR is located on the northwest corner of the proposed Project site. The incremental increase in cancer risk MEIR is 28.2 in one million. Modeled sources, receptor locations, DPM concentrations, and the locations of the PMI and MEIR are depicted on **Error! Reference source not found.**.

Table 3-3: Estimated Cancer Risk at PMI and MEIR

Receptor	UTM Location		Annual Average DPM Concentration (µg/m³)	Excess Cancer Risk (per million population)
	Easting	Northing		
PMI(A)	407141.35	3777658.90	0.109	--
Ground-level MEIR	407526.47	3777566.99	0.041	28.2

Source: MIG 2019 (see Appendix B and C)

(A) The PMI is located in the I-210 Freeway right-of-way and is not an occupied receptor location.

3.2 CANCER BURDEN

Cancer burden is the product of public cancer risk and the population exposed to the carcinogen. The population of the Arroyo at Monrovia Station Specific Plan is conservatively estimated to be 611 people. Using the highest modeled residential exposure (i.e., the MEIR), the average cancer risk based on the lifetime exposure scenario (70 years) is 28.2E-05 (approximately 28 cases per million people). The product of cancer risk and the estimated population is 0.05 and is below the SCAQMD threshold of 0.5 excess cancer cases in the Project population.

3.3 NON-CANCER RISK

The chronic non-cancer hazard quotient is the calculated pollutant-specific indicator for risk of developing an adverse health effect on specific organ system(s) targeted by the identified TAC, in this case DPM. The potential for exposure to result in chronic non-cancer effects is evaluated by comparing the estimated annual average air concentration to the chemical-specific, non-cancer chronic RELs. The REL is a concentration below which there is assumed to be no observable adverse health impact to a target organ system. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient. To evaluate the potential for adverse chronic non-cancer health effects from simultaneous exposure to multiple chemicals, the hazard quotients for all chemicals are summed, yielding a hazard index. The chronic REL for DPM was established by OEHHA as 5 µg/m³. For an acute hazard quotient, the one-hour maximum concentration is divided by the acute REL for the substance; however, there is no acute REL for DPM. Non-cancer risk equations are summarized in Table 3-4.

Figure 3-1: Ground-level Modeled Source, Receptor, and DPM Contours

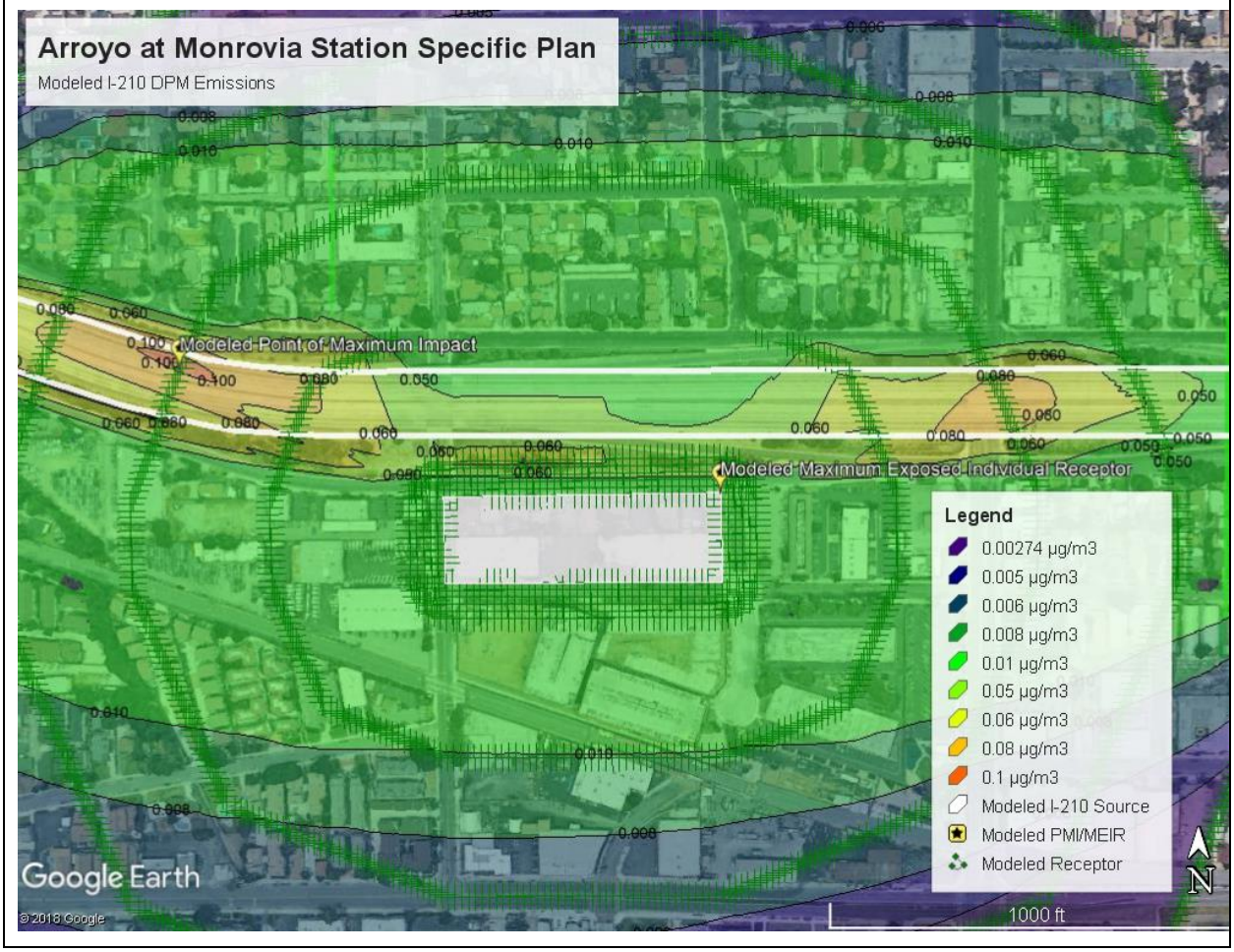


Table 3-4: Non-Cancer Risk Equation	
Chronic Hazard Quotient:	$HI_{DPM} = \frac{C_{DPM}}{REL_{AAC}}$
Where:	
HI_{DPM} =	Hazard Index; an expression of the potential for non-cancer health effects.
C_{DPM} =	Annual average DPM concentration (µg/m^3).
REL_{DPM} =	Reference exposure level (REL) for DPM; the DPM concentration at which no adverse health effects are anticipated.

As shown in Table 3-3, the annual average DPM concentration at the ground-level MEIR is 0.041 µg/m^3, which yields a chronic hazard quotient of 0.01.

4 REPORT PREPARERS AND REFERENCES

This report was prepared by MIG under contract to Evergreen Investment Partners, LLA. This report reflects the independent, objective, professional opinion of MIG. The following individuals were involved in the preparation and review of this report:

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APPENDIX A: EMFAC OUTPUT

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Arroyo Specific Plan
DPM Emission Estimates for I-210
Derived by MIG from EMFAC2017 data file

Vehicle Class	2022 - 2050 Average PM10 Emission Factor (Grams/Mile)	2022 Vehicle Population	Vehicle Class Percentage of Population	I-210 ADT	Class Vehicles on I-210	Trip Length (miles)	Total Daily Class Miles	Total Daily PM10 (Grams)	Total Daily PM10 (Grams/Sec)
LDA	0.001852246	34,751	0.46%	252,000	1,157	0.64	741	1.3719696	1.58793E-05
LDT1	0.03185804	271	0.00%	252,000	9	0.64	6	0.1837847	2.12714E-06
LDT2	0.003402849	8,920	0.12%	252,000	297	0.64	190	0.647005	7.48848E-06
LHDT1	0.00623252	64,097	0.85%	252,000	2,135	0.64	1,366	8.5150003	9.85532E-05
LHDT2	0.010840485	25,927	0.34%	252,000	863	0.64	553	5.9908427	6.93385E-05
HHDT	0.034086662	56,923	0.75%	252,000	1,896	0.64	1,213	41.357667	0.000478677
MDV	0.001443049	19,517	0.26%	252,000	650	0.64	416	0.6003004	6.94792E-06
MH	0.040468538	5,865	0.08%	252,000	195	0.64	125	5.0592931	5.85566E-05
MHDT	0.016485717	64,993	0.86%	252,000	2,165	0.64	1,385	22.838003	0.000264329
OBUS	0.024065833	3,064	0.04%	252,000	102	0.64	65	1.5716589	1.81905E-05
SBUS	0.018773815	3,460	0.05%	252,000	115	0.64	74	1.3846184	1.60257E-05
UBUS	0.004388309	10	0.00%	252,000	0	0.64	0	0.0009484	1.09763E-08
ALL DSL	0.014593326	287,799	3.80%	252,000	9,585	0.64	6,134	89.521091	0.001036124

Notes:
2022 - 2050 average emission factor derived from EMFAC 2017
2022 vehicle population dereived from EMFAC2017
I-210 ADT from 2017 Caltrans AADT data

Aermod Source Area Size:	501219.2	square feet
Rate:	2.07E-09	grams/second/sq foot
Aermod Source Area Size:	46564.8	square meters
Rate:	2.23E-08	grams/second/sq meter

Arroyo Specific Plan
Los Angeles South Coast, 2022 to 2050 Average Diesel Vehicle Emission Factors (65 MPH)
Derived by MIG from EMFAC2017 data file

Vehicle Class	Speed	PM10 Average Running Exhaust Emission Factor (Grams/Mile)
HHDT	65 MPH	0.034086662
LDA	65 MPH	0.001852246
LDT1	65 MPH	0.03185804
LDT2	65 MPH	0.003402849
LHDT1	65 MPH	0.00623252
LHDT2	65 MPH	0.010840485
MDV	65 MPH	0.001443049
MH	65 MPH	0.040468538
MHDT	65 MPH	0.016485717
OBUS	65 MPH	0.024065833
SBUS	55 MPH	0.018773815
UBUS	65 MPH	0.004388309

SOURCE: EMFAC 2017
Note: SBUS factors are for 55 mph travel speed; UBUS emissions rate based on data for 2022-2027

Arroyo Specific Plan
EMFAC2017 WebDataBase Output file
Los Angeles South Coast, 2022 to 2050 Diesel Vehicle Emission Factors (55 and 65 MPH)

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 204
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	VMT	ROG_RUNE	TOG_RUNE	CO_RUNEX	NOx_RUNE	SOx_RUNE	CO2_RUNE
Los Angeles	2022	HHDT	Aggregated	55	DSL	785331.8	0.041366	0.047092	0.159603	2.524333	0.01158	1225.716
Los Angeles	2022	LDA	Aggregated	55	DSL	75655.41	0.010944	0.012459	0.131625	0.075636	0.001682	177.9037
Los Angeles	2022	LDT1	Aggregated	55	DSL	367.1622	0.143053	0.162856	1.057979	1.208702	0.003632	384.1708
Los Angeles	2022	LDT2	Aggregated	55	DSL	20967.59	0.009113	0.010374	0.073121	0.036425	0.002276	240.7048
Los Angeles	2022	LHDT1	Aggregated	55	DSL	267682.3	0.043903	0.04998	0.255826	1.274101	0.004336	458.6794
Los Angeles	2022	LHDT2	Aggregated	55	DSL	104092.1	0.043032	0.048989	0.248362	1.218993	0.004723	499.5826
Los Angeles	2022	MDV	Aggregated	55	DSL	42751.32	0.006424	0.007314	0.104526	0.039062	0.002991	316.3844
Los Angeles	2022	MH	Aggregated	55	DSL	6377.26	0.039167	0.044589	0.182487	2.84264	0.008208	868.2078
Los Angeles	2022	MHDT	Aggregated	55	DSL	427398.3	0.03827	0.043567	0.182069	1.273683	0.007731	818.299
Los Angeles	2022	OBUS	Aggregated	55	DSL	24165.53	0.038676	0.04403	0.148787	1.611227	0.009576	1013.607
Los Angeles	2022	SBUS	Aggregated	55	DSL	4843.171	0.045394	0.051677	0.146342	5.674488	0.008935	945.7554
Los Angeles	2022	UBUS	Aggregated	55	DSL	16.64149	0.000555	0.039672	0.050258	0.146993	0.011437	1209.753
Los Angeles	2023	HHDT	Aggregated	55	DSL	805607.6	0.014338	0.016323	0.098438	1.382271	0.010723	1134.961
Los Angeles	2023	LDA	Aggregated	55	DSL	79017.25	0.00935	0.010645	0.120907	0.061947	0.001637	173.2086
Los Angeles	2023	LDT1	Aggregated	55	DSL	339.778	0.135774	0.15457	1.005371	1.143195	0.003582	378.9494
Los Angeles	2023	LDT2	Aggregated	55	DSL	22397.61	0.008573	0.009759	0.071885	0.032897	0.002213	234.127
Los Angeles	2023	LHDT1	Aggregated	55	DSL	282155	0.040304	0.045883	0.230456	1.08186	0.004269	451.5671
Los Angeles	2023	LHDT2	Aggregated	55	DSL	109857.6	0.0397	0.045196	0.225218	1.041755	0.00465	491.8939
Los Angeles	2023	MDV	Aggregated	55	DSL	45623.02	0.005838	0.006646	0.10062	0.033689	0.002907	307.4936
Los Angeles	2023	MH	Aggregated	55	DSL	6638.828	0.037117	0.042255	0.169888	2.679499	0.008109	857.7179
Los Angeles	2023	MHDT	Aggregated	55	DSL	438346.5	0.005945	0.006768	0.035622	0.632949	0.007362	779.2267

Los Angeles	2023	OBUS	Aggregated	55	DSL	24755.48	0.008476	0.009649	0.056898	0.867846	0.009254	979.5325
Los Angeles	2023	SBUS	Aggregated	55	DSL	4891.926	0.043356	0.049357	0.142367	5.364602	0.008827	934.3223
Los Angeles	2023	UBUS	Aggregated	55	DSL	16.64149	0.000555	0.039672	0.050258	0.146993	0.011437	1209.753
Los Angeles	2024	HHDT	Aggregated	55	DSL	825759.5	0.014443	0.016442	0.099427	1.382873	0.010596	1121.611
Los Angeles	2024	LDA	Aggregated	55	DSL	78866.62	0.007735	0.008805	0.111545	0.050061	0.001593	168.4848
Los Angeles	2024	LDT1	Aggregated	55	DSL	302.9878	0.126406	0.143905	0.947015	1.072644	0.003526	372.9636
Los Angeles	2024	LDT2	Aggregated	55	DSL	22765.18	0.007864	0.008953	0.070254	0.029109	0.002152	227.5859
Los Angeles	2024	LHDT1	Aggregated	55	DSL	296382.4	0.037293	0.042456	0.209384	0.922937	0.004201	444.4109
Los Angeles	2024	LHDT2	Aggregated	55	DSL	115480.4	0.036927	0.042039	0.205954	0.895137	0.004577	484.1677
Los Angeles	2024	MDV	Aggregated	55	DSL	46393.31	0.005419	0.006169	0.097899	0.029652	0.002826	298.9077
Los Angeles	2024	MH	Aggregated	55	DSL	6639.549	0.035355	0.04025	0.159079	2.543057	0.007979	843.9657
Los Angeles	2024	MHDT	Aggregated	55	DSL	433892.2	0.00593	0.00675	0.035767	0.627194	0.007245	766.8603
Los Angeles	2024	OBUS	Aggregated	55	DSL	24822.49	0.008637	0.009832	0.05803	0.877985	0.009179	971.5657
Los Angeles	2024	SBUS	Aggregated	55	DSL	4932.23	0.041365	0.047091	0.138395	5.033606	0.008705	921.3757
Los Angeles	2024	UBUS	Aggregated	55	DSL	15.56331	0.000555	0.039672	0.050258	0.146993	0.011437	1209.753
Los Angeles	2025	HHDT	Aggregated	55	DSL	844043.9	0.014449	0.016449	0.0997	1.365142	0.010433	1104.271
Los Angeles	2025	LDA	Aggregated	55	DSL	81341.53	0.006732	0.007664	0.104612	0.040918	0.001548	163.7792
Los Angeles	2025	LDT1	Aggregated	55	DSL	282.4597	0.118513	0.134919	0.8906	1.002939	0.003462	366.2556
Los Angeles	2025	LDT2	Aggregated	55	DSL	23852.88	0.007593	0.008644	0.069728	0.026455	0.00209	221.1237
Los Angeles	2025	LHDT1	Aggregated	55	DSL	308373.1	0.034747	0.039557	0.191632	0.788794	0.004133	437.1942
Los Angeles	2025	LHDT2	Aggregated	55	DSL	120237.6	0.034615	0.039407	0.18993	0.772333	0.004504	476.4072
Los Angeles	2025	MDV	Aggregated	55	DSL	48607.66	0.005004	0.005696	0.095435	0.025895	0.002745	290.3659
Los Angeles	2025	MH	Aggregated	55	DSL	6845.457	0.033854	0.03854	0.149729	2.424986	0.007855	830.8673
Los Angeles	2025	MHDT	Aggregated	55	DSL	442324.8	0.00591	0.006728	0.03586	0.620875	0.007123	753.9967
Los Angeles	2025	OBUS	Aggregated	55	DSL	25359.83	0.008577	0.009764	0.057612	0.855273	0.008969	949.3467
Los Angeles	2025	SBUS	Aggregated	55	DSL	4964.396	0.03932	0.044763	0.134094	4.682033	0.008577	907.8607
Los Angeles	2025	UBUS	Aggregated	55	DSL	9.911139	0.000555	0.039672	0.050258	0.146993	0.011437	1209.753
Los Angeles	2026	HHDT	Aggregated	55	DSL	864515.3	0.014394	0.016386	0.099552	1.339073	0.010255	1085.425
Los Angeles	2026	LDA	Aggregated	55	DSL	83319.43	0.005775	0.006574	0.098398	0.032723	0.00151	159.7458
Los Angeles	2026	LDT1	Aggregated	55	DSL	254.2138	0.103745	0.118107	0.811303	0.892278	0.003387	358.2988
Los Angeles	2026	LDT2	Aggregated	55	DSL	24785.82	0.007501	0.008539	0.070088	0.025205	0.00204	215.7384
Los Angeles	2026	LHDT1	Aggregated	55	DSL	319498	0.03256	0.037067	0.176488	0.674249	0.004064	429.9378
Los Angeles	2026	LHDT2	Aggregated	55	DSL	124629.6	0.032649	0.037168	0.176295	0.668299	0.00443	468.5966
Los Angeles	2026	MDV	Aggregated	55	DSL	50495.73	0.00462	0.00526	0.093318	0.022563	0.002676	283.0777

Los Angeles	2026	MH	Aggregated	55	DSL	7036.696	0.03251	0.03701	0.141274	2.321212	0.007745	819.2847
Los Angeles	2026	MHDT	Aggregated	55	DSL	450766.9	0.005883	0.006698	0.035893	0.612954	0.007007	741.6271
Los Angeles	2026	OBUS	Aggregated	55	DSL	25904.24	0.008526	0.009706	0.057256	0.835716	0.008779	929.1875
Los Angeles	2026	SBUS	Aggregated	55	DSL	4989.376	0.037085	0.042218	0.129166	4.302234	0.008444	893.7611
Los Angeles	2026	UBUS	Aggregated	55	DSL	9.911139	0.000555	0.039672	0.050258	0.146993	0.011437	1209.753
Los Angeles	2027	HHDT	Aggregated	55	DSL	886291.2	0.014327	0.01631	0.0993	1.311598	0.01007	1065.93
Los Angeles	2027	LDA	Aggregated	55	DSL	85179.1	0.004888	0.005564	0.092832	0.02547	0.001477	156.2487
Los Angeles	2027	LDT1	Aggregated	55	DSL	216.7554	0.075911	0.08642	0.684156	0.701435	0.003283	347.3002
Los Angeles	2027	LDT2	Aggregated	55	DSL	25650.53	0.007284	0.008292	0.06981	0.023222	0.001994	210.9586
Los Angeles	2027	LHDT1	Aggregated	55	DSL	329719.3	0.030706	0.034957	0.163678	0.57738	0.003996	422.6952
Los Angeles	2027	LHDT2	Aggregated	55	DSL	128655.1	0.030993	0.035284	0.1648	0.580767	0.004356	460.7994
Los Angeles	2027	MDV	Aggregated	55	DSL	52264.26	0.004157	0.004732	0.090898	0.018821	0.002616	276.6952
Los Angeles	2027	MH	Aggregated	55	DSL	7210.35	0.031277	0.035607	0.133566	2.22826	0.007631	807.23
Los Angeles	2027	MHDT	Aggregated	55	DSL	460006.3	0.005855	0.006665	0.03588	0.603546	0.006883	728.5671
Los Angeles	2027	OBUS	Aggregated	55	DSL	26507.84	0.00847	0.009643	0.056865	0.816936	0.008588	909.063
Los Angeles	2027	SBUS	Aggregated	55	DSL	5019.282	0.03463	0.039423	0.123404	3.898908	0.008299	878.4039
Los Angeles	2027	UBUS	Aggregated	55	DSL	9.911139	0.000555	0.039672	0.050258	0.146993	0.011437	1209.753
Los Angeles	2028	HHDT	Aggregated	55	DSL	905260.5	0.014246	0.016218	0.098926	1.283781	0.009882	1045.972
Los Angeles	2028	LDA	Aggregated	55	DSL	86813.55	0.00431	0.004907	0.088229	0.019965	0.001449	153.2282
Los Angeles	2028	LDT1	Aggregated	55	DSL	198.1684	0.065277	0.074314	0.59447	0.589399	0.003193	337.7448
Los Angeles	2028	LDT2	Aggregated	55	DSL	26429.64	0.007252	0.008256	0.070304	0.022554	0.001956	206.8889
Los Angeles	2028	LHDT1	Aggregated	55	DSL	339156.1	0.029126	0.033158	0.152788	0.494839	0.003936	416.3249
Los Angeles	2028	LHDT2	Aggregated	55	DSL	132389.4	0.029603	0.033701	0.155173	0.507215	0.004291	453.9189
Los Angeles	2028	MDV	Aggregated	55	DSL	53865.17	0.003882	0.004419	0.089124	0.016208	0.002564	271.2274
Los Angeles	2028	MH	Aggregated	55	DSL	7366.188	0.030188	0.034367	0.126692	2.145617	0.007526	796.0644
Los Angeles	2028	MHDT	Aggregated	55	DSL	466820	0.005837	0.006645	0.035905	0.598272	0.00677	716.5739
Los Angeles	2028	OBUS	Aggregated	55	DSL	26958.46	0.008458	0.009629	0.056767	0.809451	0.008434	892.7377
Los Angeles	2028	SBUS	Aggregated	55	DSL	5060.31	0.032029	0.036462	0.117017	3.490552	0.008148	862.4489
Los Angeles	2028	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2029	HHDT	Aggregated	55	DSL	924257.3	0.014142	0.0161	0.098393	1.253971	0.009685	1025.159
Los Angeles	2029	LDA	Aggregated	55	DSL	88248.86	0.003739	0.004257	0.08382	0.016175	0.001424	150.6463
Los Angeles	2029	LDT1	Aggregated	55	DSL	182.9755	0.049061	0.055853	0.465891	0.491551	0.003116	329.587
Los Angeles	2029	LDT2	Aggregated	55	DSL	27105.35	0.007213	0.008211	0.070676	0.022079	0.001921	203.2535
Los Angeles	2029	LHDT1	Aggregated	55	DSL	347956.1	0.027791	0.031639	0.143576	0.424928	0.003884	410.8373

Los Angeles	2029	LHDT2	Aggregated	55	DSL	135873.6	0.028436	0.032372	0.147111	0.445415	0.004235	447.944
Los Angeles	2029	MDV	Aggregated	55	DSL	55295.98	0.003597	0.004095	0.08728	0.014206	0.002519	266.458
Los Angeles	2029	MH	Aggregated	55	DSL	7510.027	0.029209	0.033253	0.120465	2.071159	0.007431	786.0442
Los Angeles	2029	MHDT	Aggregated	55	DSL	473432.6	0.005821	0.006626	0.035924	0.594172	0.006667	705.6633
Los Angeles	2029	OBUS	Aggregated	55	DSL	27410.98	0.008465	0.009636	0.056789	0.80797	0.008306	879.1743
Los Angeles	2029	SBUS	Aggregated	55	DSL	5115.259	0.029442	0.033518	0.110451	3.095462	0.007997	846.4487
Los Angeles	2029	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2030	HHDT	Aggregated	55	DSL	943299.7	0.014036	0.015979	0.097828	1.223887	0.009484	1003.821
Los Angeles	2030	LDA	Aggregated	55	DSL	89511.76	0.003281	0.003735	0.080274	0.013213	0.001403	148.3817
Los Angeles	2030	LDT1	Aggregated	55	DSL	172.5541	0.036359	0.041392	0.363301	0.407775	0.003039	321.4799
Los Angeles	2030	LDT2	Aggregated	55	DSL	27695.88	0.007177	0.00817	0.071002	0.021673	0.001891	199.9962
Los Angeles	2030	LHDT1	Aggregated	55	DSL	356171.1	0.026647	0.030336	0.135778	0.364792	0.003839	406.0485
Los Angeles	2030	LHDT2	Aggregated	55	DSL	139109.5	0.027444	0.031243	0.140385	0.392731	0.004185	442.6936
Los Angeles	2030	MDV	Aggregated	55	DSL	56598.42	0.003413	0.003885	0.086164	0.012843	0.00248	262.3106
Los Angeles	2030	MH	Aggregated	55	DSL	7645.387	0.028353	0.032277	0.114941	2.004704	0.007347	777.1416
Los Angeles	2030	MHDT	Aggregated	55	DSL	479826.2	0.005804	0.006607	0.035926	0.590069	0.006571	695.5589
Los Angeles	2030	OBUS	Aggregated	55	DSL	27833.78	0.008486	0.00966	0.056912	0.808789	0.008202	868.1189
Los Angeles	2030	SBUS	Aggregated	55	DSL	5183.384	0.026906	0.030631	0.103748	2.721738	0.007846	830.4869
Los Angeles	2030	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2031	HHDT	Aggregated	55	DSL	999250.8	0.013926	0.015854	0.097188	1.193073	0.00927	981.1696
Los Angeles	2031	LDA	Aggregated	55	DSL	93116.77	0.003075	0.003501	0.078646	0.01173	0.001385	146.4756
Los Angeles	2031	LDT1	Aggregated	55	DSL	170.3455	0.027375	0.031164	0.288758	0.341012	0.002967	313.8759
Los Angeles	2031	LDT2	Aggregated	55	DSL	28969.04	0.007157	0.008148	0.071379	0.021397	0.001863	197.0579
Los Angeles	2031	LHDT1	Aggregated	55	DSL	415777.6	0.025683	0.029238	0.129278	0.313772	0.003799	401.839
Los Angeles	2031	LHDT2	Aggregated	55	DSL	162405.6	0.026597	0.030279	0.134776	0.347773	0.004141	438.0557
Los Angeles	2031	MDV	Aggregated	55	DSL	59333.73	0.003249	0.003699	0.085172	0.01168	0.002445	258.6423
Los Angeles	2031	MH	Aggregated	55	DSL	8253.377	0.027517	0.031326	0.109619	1.942849	0.007271	769.1726
Los Angeles	2031	MHDT	Aggregated	55	DSL	515505.7	0.005787	0.006588	0.035915	0.585726	0.006484	686.3306
Los Angeles	2031	OBUS	Aggregated	55	DSL	30003.79	0.008514	0.009693	0.057092	0.809092	0.008119	859.3883
Los Angeles	2031	SBUS	Aggregated	55	DSL	5259.706	0.024435	0.027818	0.096889	2.373923	0.007698	814.768
Los Angeles	2031	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2032	HHDT	Aggregated	55	DSL	1015468	0.013837	0.015752	0.096715	1.1671	0.009086	961.714
Los Angeles	2032	LDA	Aggregated	55	DSL	94102.13	0.002829	0.003221	0.076712	0.010182	0.001368	144.749
Los Angeles	2032	LDT1	Aggregated	55	DSL	166.6572	0.022383	0.025481	0.244361	0.292574	0.002903	307.0534

Los Angeles	2032	LDT2	Aggregated	55	DSL	29418.5	0.007159	0.00815	0.071853	0.021263	0.001838	194.4218
Los Angeles	2032	LHDT1	Aggregated	55	DSL	424102.4	0.024886	0.028331	0.124051	0.271188	0.003764	398.1262
Los Angeles	2032	LHDT2	Aggregated	55	DSL	165639	0.025842	0.029419	0.129899	0.308475	0.004102	433.93
Los Angeles	2032	MDV	Aggregated	55	DSL	60407.67	0.003131	0.003564	0.084488	0.010835	0.002414	255.4
Los Angeles	2032	MH	Aggregated	55	DSL	8379.592	0.026826	0.03054	0.105007	1.88822	0.007204	762.065
Los Angeles	2032	MHDT	Aggregated	55	DSL	521007.9	0.005774	0.006573	0.035907	0.581258	0.006408	678.2828
Los Angeles	2032	OBUS	Aggregated	55	DSL	30426.45	0.008519	0.009698	0.057109	0.804207	0.008039	850.9308
Los Angeles	2032	SBUS	Aggregated	55	DSL	5334.652	0.022069	0.025124	0.08994	2.059632	0.007554	799.6049
Los Angeles	2032	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2033	HHDT	Aggregated	55	DSL	1031727	0.013759	0.015664	0.096291	1.143697	0.008913	943.4589
Los Angeles	2033	LDA	Aggregated	55	DSL	94980.11	0.002712	0.003087	0.075745	0.009381	0.001355	143.28
Los Angeles	2033	LDT1	Aggregated	55	DSL	164.92	0.019916	0.022673	0.21976	0.258455	0.002847	301.1592
Los Angeles	2033	LDT2	Aggregated	55	DSL	29799.15	0.007159	0.00815	0.072243	0.021145	0.001815	192.0414
Los Angeles	2033	LHDT1	Aggregated	55	DSL	431900.1	0.024209	0.02756	0.119688	0.234702	0.003733	394.8241
Los Angeles	2033	LHDT2	Aggregated	55	DSL	168668.8	0.025198	0.028687	0.125848	0.275023	0.004067	430.2541
Los Angeles	2033	MDV	Aggregated	55	DSL	61366.73	0.003031	0.00345	0.083912	0.010155	0.002387	252.5193
Los Angeles	2033	MH	Aggregated	55	DSL	8498.773	0.026158	0.029779	0.100572	1.837274	0.007144	755.6429
Los Angeles	2033	MHDT	Aggregated	55	DSL	526429.2	0.005764	0.006561	0.035906	0.577025	0.006341	671.1451
Los Angeles	2033	OBUS	Aggregated	55	DSL	30855.3	0.008512	0.00969	0.057048	0.797163	0.007964	842.9345
Los Angeles	2033	SBUS	Aggregated	55	DSL	5406.537	0.019802	0.022543	0.082859	1.777683	0.007416	784.9736
Los Angeles	2033	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2034	HHDT	Aggregated	55	DSL	1047990	0.013678	0.015571	0.095835	1.121402	0.008749	926.0651
Los Angeles	2034	LDA	Aggregated	55	DSL	95735.17	0.002608	0.002969	0.074881	0.008717	0.001342	141.9916
Los Angeles	2034	LDT1	Aggregated	55	DSL	163.5656	0.017818	0.020284	0.198583	0.228375	0.002797	295.8164
Los Angeles	2034	LDT2	Aggregated	55	DSL	30121.88	0.007161	0.008153	0.072592	0.021061	0.001795	189.9152
Los Angeles	2034	LHDT1	Aggregated	55	DSL	439222.4	0.023659	0.026934	0.116236	0.204658	0.003705	391.8879
Los Angeles	2034	LHDT2	Aggregated	55	DSL	171517.9	0.024641	0.028052	0.122468	0.246672	0.004036	426.9774
Los Angeles	2034	MDV	Aggregated	55	DSL	62225.77	0.002945	0.003352	0.083409	0.009591	0.002363	249.9699
Los Angeles	2034	MH	Aggregated	55	DSL	8610.591	0.025522	0.029055	0.096349	1.790436	0.007089	749.8422
Los Angeles	2034	MHDT	Aggregated	55	DSL	531712.9	0.005751	0.006548	0.035882	0.572225	0.006278	664.4903
Los Angeles	2034	OBUS	Aggregated	55	DSL	31253.07	0.008487	0.009661	0.056867	0.787571	0.007889	835.0122
Los Angeles	2034	SBUS	Aggregated	55	DSL	5475.304	0.017654	0.020097	0.07553	1.530484	0.007283	770.9025
Los Angeles	2034	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2035	HHDT	Aggregated	55	DSL	1064290	0.013609	0.015493	0.095435	1.102184	0.008598	910.0722

Los Angeles	2035	LDA	Aggregated	55	DSL	96376.28	0.002519	0.002868	0.074135	0.008178	0.001332	140.8709
Los Angeles	2035	LDT1	Aggregated	55	DSL	161.565	0.014453	0.016454	0.168563	0.195092	0.002748	290.7164
Los Angeles	2035	LDT2	Aggregated	55	DSL	30398.33	0.007169	0.008162	0.072933	0.021018	0.001778	188.0515
Los Angeles	2035	LHDT1	Aggregated	55	DSL	445935.5	0.023168	0.026376	0.113115	0.177656	0.00368	389.2382
Los Angeles	2035	LHDT2	Aggregated	55	DSL	174114.3	0.024131	0.027472	0.119312	0.220988	0.004008	424.0011
Los Angeles	2035	MDV	Aggregated	55	DSL	62978.56	0.002861	0.003257	0.082891	0.009082	0.002342	247.6991
Los Angeles	2035	MH	Aggregated	55	DSL	8716.631	0.02495	0.028403	0.092468	1.747945	0.007039	744.6253
Los Angeles	2035	MHDT	Aggregated	55	DSL	536937.6	0.005736	0.00653	0.035838	0.567161	0.006221	658.4911
Los Angeles	2035	OBUS	Aggregated	55	DSL	31677.84	0.008453	0.009623	0.056633	0.777697	0.007816	827.3478
Los Angeles	2035	SBUS	Aggregated	55	DSL	5541.796	0.015665	0.017833	0.068161	1.320633	0.007157	757.553
Los Angeles	2035	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2036	HHDT	Aggregated	55	DSL	1083539	0.013559	0.015436	0.095149	1.086699	0.008468	896.3067
Los Angeles	2036	LDA	Aggregated	55	DSL	96925.86	0.002437	0.002774	0.073435	0.007701	0.001323	139.899
Los Angeles	2036	LDT1	Aggregated	55	DSL	160.6304	0.012734	0.014497	0.151365	0.170901	0.002707	286.3112
Los Angeles	2036	LDT2	Aggregated	55	DSL	30641.57	0.007174	0.008168	0.073216	0.020974	0.001763	186.4406
Los Angeles	2036	LHDT1	Aggregated	55	DSL	452152.8	0.022756	0.025906	0.110495	0.154587	0.003657	386.856
Los Angeles	2036	LHDT2	Aggregated	55	DSL	176600.3	0.023757	0.027045	0.117069	0.199794	0.003984	421.3939
Los Angeles	2036	MDV	Aggregated	55	DSL	63652.26	0.002791	0.003177	0.082451	0.008671	0.002323	245.6958
Los Angeles	2036	MH	Aggregated	55	DSL	8819.283	0.024454	0.027839	0.08897	1.708601	0.006995	739.9148
Los Angeles	2036	MHDT	Aggregated	55	DSL	543004.6	0.005725	0.006517	0.035797	0.562231	0.006174	653.5537
Los Angeles	2036	OBUS	Aggregated	55	DSL	32088.36	0.008418	0.009584	0.05639	0.767954	0.00775	820.3136
Los Angeles	2036	SBUS	Aggregated	55	DSL	5607.567	0.013907	0.015832	0.061244	1.149565	0.00704	745.1497
Los Angeles	2036	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2037	HHDT	Aggregated	55	DSL	1102841	0.013521	0.015392	0.09493	1.074685	0.008348	883.6421
Los Angeles	2037	LDA	Aggregated	55	DSL	97390.12	0.002371	0.002699	0.072862	0.007327	0.001315	139.0704
Los Angeles	2037	LDT1	Aggregated	55	DSL	160.357	0.011946	0.0136	0.14177	0.15312	0.002671	282.587
Los Angeles	2037	LDT2	Aggregated	55	DSL	30849.67	0.00718	0.008174	0.073467	0.020947	0.001749	185.0574
Los Angeles	2037	LHDT1	Aggregated	55	DSL	457732.3	0.022383	0.025481	0.108103	0.133708	0.003637	384.6826
Los Angeles	2037	LHDT2	Aggregated	55	DSL	178829.5	0.02341	0.026651	0.11495	0.180226	0.003961	419.0153
Los Angeles	2037	MDV	Aggregated	55	DSL	64245.86	0.002726	0.003103	0.082033	0.008312	0.002306	243.9287
Los Angeles	2037	MH	Aggregated	55	DSL	8916.371	0.023973	0.027292	0.085594	1.671216	0.006954	735.6074
Los Angeles	2037	MHDT	Aggregated	55	DSL	548972.2	0.005714	0.006505	0.035757	0.558058	0.006127	648.5044
Los Angeles	2037	OBUS	Aggregated	55	DSL	32505.91	0.008386	0.009547	0.056166	0.759092	0.007689	813.9103
Los Angeles	2037	SBUS	Aggregated	55	DSL	5675.847	0.012367	0.014079	0.054974	1.011043	0.006931	733.5971

Los Angeles	2037	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2038	HHDT	Aggregated	55	DSL	1122180	0.013493	0.015361	0.094775	1.06551	0.008244	872.6588
Los Angeles	2038	LDA	Aggregated	55	DSL	97777.28	0.002318	0.002639	0.072391	0.007018	0.001308	138.37
Los Angeles	2038	LDT1	Aggregated	55	DSL	159.9556	0.011309	0.012875	0.133026	0.135022	0.002637	278.9493
Los Angeles	2038	LDT2	Aggregated	55	DSL	31028.02	0.007185	0.00818	0.073679	0.020917	0.001738	183.8827
Los Angeles	2038	LHDT1	Aggregated	55	DSL	462781.5	0.022079	0.025136	0.106156	0.116458	0.003618	382.7199
Los Angeles	2038	LHDT2	Aggregated	55	DSL	180807.5	0.023103	0.026302	0.113088	0.162891	0.003941	416.8367
Los Angeles	2038	MDV	Aggregated	55	DSL	64767.6	0.002673	0.003043	0.081682	0.008001	0.002291	242.3803
Los Angeles	2038	MH	Aggregated	55	DSL	9006.455	0.023521	0.026777	0.082418	1.63662	0.006917	731.6732
Los Angeles	2038	MHDT	Aggregated	55	DSL	554817.7	0.005704	0.006494	0.035719	0.55433	0.006084	643.9578
Los Angeles	2038	OBUS	Aggregated	55	DSL	32935.28	0.008362	0.009519	0.055988	0.752879	0.007637	808.3157
Los Angeles	2038	SBUS	Aggregated	55	DSL	5743.75	0.011032	0.012559	0.049607	0.899933	0.006829	722.8556
Los Angeles	2038	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2039	HHDT	Aggregated	55	DSL	1141558	0.013474	0.015339	0.094675	1.058649	0.008156	863.3406
Los Angeles	2039	LDA	Aggregated	55	DSL	98104.02	0.002274	0.002589	0.072001	0.006767	0.001303	137.7847
Los Angeles	2039	LDT1	Aggregated	55	DSL	159.7922	0.010795	0.012289	0.125986	0.120366	0.002608	275.8895
Los Angeles	2039	LDT2	Aggregated	55	DSL	31183.95	0.007189	0.008184	0.073857	0.020885	0.001729	182.8998
Los Angeles	2039	LHDT1	Aggregated	55	DSL	467341.7	0.021816	0.024836	0.104494	0.101417	0.003601	380.9435
Los Angeles	2039	LHDT2	Aggregated	55	DSL	182550.8	0.022791	0.025946	0.111221	0.145586	0.003922	414.8352
Los Angeles	2039	MDV	Aggregated	55	DSL	65225.46	0.002626	0.00299	0.081368	0.007715	0.002279	241.0258
Los Angeles	2039	MH	Aggregated	55	DSL	9091.989	0.023115	0.026315	0.079495	1.605956	0.006883	728.1007
Los Angeles	2039	MHDT	Aggregated	55	DSL	560547.6	0.005695	0.006483	0.035679	0.550981	0.006045	639.8585
Los Angeles	2039	OBUS	Aggregated	55	DSL	33339.7	0.00834	0.009494	0.055828	0.74789	0.00759	803.3484
Los Angeles	2039	SBUS	Aggregated	55	DSL	5804.373	0.009876	0.011243	0.045277	0.810919	0.006734	712.758
Los Angeles	2039	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2040	HHDT	Aggregated	55	DSL	1160957	0.013462	0.015326	0.094619	1.053395	0.008083	855.5476
Los Angeles	2040	LDA	Aggregated	55	DSL	98381.2	0.002236	0.002546	0.071656	0.006507	0.001298	137.2981
Los Angeles	2040	LDT1	Aggregated	55	DSL	159.7161	0.010339	0.01177	0.11976	0.107362	0.002583	273.2062
Los Angeles	2040	LDT2	Aggregated	55	DSL	31323.48	0.007193	0.008189	0.074019	0.020869	0.001721	182.091
Los Angeles	2040	LHDT1	Aggregated	55	DSL	471463.9	0.021593	0.024582	0.10309	0.08856	0.003586	379.3384
Los Angeles	2040	LHDT2	Aggregated	55	DSL	184210.6	0.022583	0.02571	0.110051	0.133553	0.003905	413.0938
Los Angeles	2040	MDV	Aggregated	55	DSL	65627.32	0.002584	0.002942	0.081076	0.007452	0.002267	239.8427
Los Angeles	2040	MH	Aggregated	55	DSL	9173.119	0.022753	0.025903	0.076824	1.579081	0.006852	724.785
Los Angeles	2040	MHDT	Aggregated	55	DSL	566190.5	0.005686	0.006473	0.035644	0.548124	0.006011	636.2026

Los Angeles	2040	OBUS	Aggregated	55	DSL	33743.83	0.008328	0.00948	0.055734	0.744894	0.00755	799.1566
Los Angeles	2040	SBUS	Aggregated	55	DSL	5853.822	0.008876	0.010104	0.04201	0.738835	0.006642	703.0906
Los Angeles	2040	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2041	HHDT	Aggregated	55	DSL	1176943	0.013454	0.015316	0.094588	1.049274	0.008021	849.055
Los Angeles	2041	LDA	Aggregated	55	DSL	98606.7	0.002207	0.002513	0.071397	0.006322	0.001294	136.9039
Los Angeles	2041	LDT1	Aggregated	55	DSL	159.0374	0.009695	0.011037	0.110896	0.089086	0.002553	270.064
Los Angeles	2041	LDT2	Aggregated	55	DSL	31445.04	0.007196	0.008193	0.074164	0.020855	0.001715	181.4349
Los Angeles	2041	LHDT1	Aggregated	55	DSL	475106.5	0.021414	0.024378	0.102008	0.078091	0.003572	377.8943
Los Angeles	2041	LHDT2	Aggregated	55	DSL	185680.3	0.022406	0.025508	0.109185	0.123313	0.00389	411.5264
Los Angeles	2041	MDV	Aggregated	55	DSL	65972.5	0.002548	0.002901	0.080825	0.00724	0.002258	238.8232
Los Angeles	2041	MH	Aggregated	55	DSL	9248.645	0.02242	0.025524	0.074307	1.554832	0.006823	721.735
Los Angeles	2041	MHDT	Aggregated	55	DSL	571964.4	0.005679	0.006465	0.035612	0.54554	0.005979	632.8152
Los Angeles	2041	OBUS	Aggregated	55	DSL	34144.84	0.008328	0.009481	0.055724	0.744238	0.007518	795.7411
Los Angeles	2041	SBUS	Aggregated	55	DSL	5892.913	0.008036	0.009148	0.039674	0.681325	0.006556	693.9458
Los Angeles	2041	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2042	HHDT	Aggregated	55	DSL	1195866	0.01345	0.015312	0.094585	1.046102	0.007972	843.8036
Los Angeles	2042	LDA	Aggregated	55	DSL	98813.35	0.002185	0.002487	0.071199	0.006178	0.001291	136.5878
Los Angeles	2042	LDT1	Aggregated	55	DSL	158.7781	0.009244	0.010524	0.104721	0.076259	0.00253	267.6478
Los Angeles	2042	LDT2	Aggregated	55	DSL	31557.89	0.007199	0.008196	0.07429	0.020838	0.00171	180.9029
Los Angeles	2042	LHDT1	Aggregated	55	DSL	478366.3	0.021257	0.024199	0.101034	0.068901	0.00356	376.5828
Los Angeles	2042	LHDT2	Aggregated	55	DSL	187055.8	0.022267	0.02535	0.108555	0.11509	0.003877	410.1411
Los Angeles	2042	MDV	Aggregated	55	DSL	66284.41	0.002517	0.002865	0.080608	0.00706	0.002249	237.9498
Los Angeles	2042	MH	Aggregated	55	DSL	9320.754	0.022118	0.02518	0.071972	1.533214	0.006797	718.9329
Los Angeles	2042	MHDT	Aggregated	55	DSL	577669.5	0.005673	0.006458	0.03559	0.543257	0.00595	629.8159
Los Angeles	2042	OBUS	Aggregated	55	DSL	34550.95	0.008336	0.00949	0.05577	0.745237	0.007492	793.0117
Los Angeles	2042	SBUS	Aggregated	55	DSL	5917.562	0.007314	0.008327	0.038029	0.634795	0.006473	685.133
Los Angeles	2042	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2043	HHDT	Aggregated	55	DSL	1214803	0.013447	0.015308	0.09459	1.043288	0.00793	839.4277
Los Angeles	2043	LDA	Aggregated	55	DSL	98983.18	0.002167	0.002467	0.071048	0.006054	0.001289	136.3372
Los Angeles	2043	LDT1	Aggregated	55	DSL	158.4726	0.008816	0.010036	0.098842	0.064063	0.002509	265.4161
Los Angeles	2043	LDT2	Aggregated	55	DSL	31657.87	0.007202	0.008199	0.074408	0.020828	0.001706	180.4791
Los Angeles	2043	LHDT1	Aggregated	55	DSL	481292.4	0.021147	0.024074	0.100372	0.06216	0.003549	375.4301
Los Angeles	2043	LHDT2	Aggregated	55	DSL	188348.6	0.022176	0.025246	0.108215	0.109315	0.003866	408.9523
Los Angeles	2043	MDV	Aggregated	55	DSL	66551.93	0.002491	0.002836	0.080435	0.006932	0.002242	237.2058

Los Angeles	2043	MH	Aggregated	55	DSL	9386.909	0.021836	0.024859	0.069765	1.51354	0.006772	716.2994
Los Angeles	2043	MHDT	Aggregated	55	DSL	583307.3	0.005669	0.006453	0.035572	0.541264	0.005924	627.0686
Los Angeles	2043	OBUS	Aggregated	55	DSL	34939.56	0.008352	0.009508	0.055867	0.747149	0.007471	790.8375
Los Angeles	2043	SBUS	Aggregated	55	DSL	5932.943	0.006724	0.007654	0.036906	0.597797	0.006394	676.7935
Los Angeles	2043	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2044	HHDT	Aggregated	55	DSL	1233739	0.013443	0.015304	0.094598	1.040399	0.007896	835.7735
Los Angeles	2044	LDA	Aggregated	55	DSL	99126.84	0.002153	0.002451	0.070937	0.005952	0.001287	136.1413
Los Angeles	2044	LDT1	Aggregated	55	DSL	158.4156	0.008532	0.009713	0.094977	0.05597	0.002493	263.7146
Los Angeles	2044	LDT2	Aggregated	55	DSL	31746.58	0.007205	0.008202	0.074516	0.020822	0.001703	180.1388
Los Angeles	2044	LHDT1	Aggregated	55	DSL	483832.5	0.021035	0.023947	0.099689	0.055488	0.003539	374.3887
Los Angeles	2044	LHDT2	Aggregated	55	DSL	189396.6	0.021977	0.025019	0.107287	0.098667	0.003855	407.806
Los Angeles	2044	MDV	Aggregated	55	DSL	66786.58	0.00247	0.002811	0.080297	0.006823	0.002236	236.5766
Los Angeles	2044	MH	Aggregated	55	DSL	9448.08	0.021583	0.024571	0.067722	1.49625	0.006749	713.8587
Los Angeles	2044	MHDT	Aggregated	55	DSL	588896.7	0.005665	0.00645	0.035562	0.539651	0.005901	624.6148
Los Angeles	2044	OBUS	Aggregated	55	DSL	35335.5	0.008366	0.009524	0.055951	0.748873	0.007454	788.998
Los Angeles	2044	SBUS	Aggregated	55	DSL	5947.986	0.006271	0.007139	0.036152	0.569607	0.006322	669.2001
Los Angeles	2044	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2045	HHDT	Aggregated	55	DSL	1252685	0.01344	0.015301	0.094606	1.037655	0.007867	832.6564
Los Angeles	2045	LDA	Aggregated	55	DSL	99259.04	0.002143	0.00244	0.070861	0.005874	0.001286	135.9899
Los Angeles	2045	LDT1	Aggregated	55	DSL	158.5265	0.00834	0.009494	0.092376	0.050451	0.002481	262.4055
Los Angeles	2045	LDT2	Aggregated	55	DSL	31829	0.007207	0.008205	0.074617	0.020818	0.0017	179.8656
Los Angeles	2045	LHDT1	Aggregated	55	DSL	486227.6	0.020947	0.023847	0.099194	0.050148	0.003531	373.4877
Los Angeles	2045	LHDT2	Aggregated	55	DSL	190411.9	0.021818	0.024839	0.106569	0.090066	0.003846	406.8272
Los Angeles	2045	MDV	Aggregated	55	DSL	66998.17	0.002452	0.002792	0.080195	0.006745	0.002231	236.0469
Los Angeles	2045	MH	Aggregated	55	DSL	9504.386	0.021335	0.024289	0.065771	1.479475	0.006727	711.5625
Los Angeles	2045	MHDT	Aggregated	55	DSL	594444.3	0.005663	0.006447	0.035559	0.53855	0.005881	622.4582
Los Angeles	2045	OBUS	Aggregated	55	DSL	35708.64	0.008377	0.009537	0.056024	0.749942	0.007439	787.4461
Los Angeles	2045	SBUS	Aggregated	55	DSL	5967.311	0.005964	0.006789	0.035689	0.550073	0.006259	662.5449
Los Angeles	2045	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2046	HHDT	Aggregated	55	DSL	1272891	0.013437	0.015297	0.094606	1.034975	0.007842	830.0134
Los Angeles	2046	LDA	Aggregated	55	DSL	99359.47	0.002136	0.002431	0.070813	0.005814	0.001284	135.874
Los Angeles	2046	LDT1	Aggregated	55	DSL	158.613	0.008177	0.009309	0.090187	0.045795	0.00247	261.2656
Los Angeles	2046	LDT2	Aggregated	55	DSL	31899.56	0.00721	0.008208	0.074711	0.020813	0.001698	179.6455
Los Angeles	2046	LHDT1	Aggregated	55	DSL	488291.5	0.020867	0.023756	0.098749	0.045303	0.003523	372.6819

Los Angeles	2046	LHDT2	Aggregated	55	DSL	191305.6	0.021638	0.024634	0.105728	0.080562	0.003838	405.9478
Los Angeles	2046	MDV	Aggregated	55	DSL	67175.91	0.002438	0.002775	0.080116	0.006667	0.002227	235.6048
Los Angeles	2046	MH	Aggregated	55	DSL	9557.775	0.021146	0.024073	0.064171	1.466647	0.006707	709.4808
Los Angeles	2046	MHDT	Aggregated	55	DSL	601028.6	0.005662	0.006446	0.035556	0.537635	0.005862	620.5038
Los Angeles	2046	OBUS	Aggregated	55	DSL	36102.15	0.008383	0.009544	0.056062	0.750304	0.007426	785.9883
Los Angeles	2046	SBUS	Aggregated	55	DSL	5990.379	0.005778	0.006578	0.03544	0.538105	0.006206	656.8638
Los Angeles	2046	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2047	HHDT	Aggregated	55	DSL	1293119	0.013433	0.015292	0.094602	1.032321	0.00782	827.6911
Los Angeles	2047	LDA	Aggregated	55	DSL	99454.53	0.00213	0.002425	0.070776	0.00575	0.001284	135.7841
Los Angeles	2047	LDT1	Aggregated	55	DSL	157.9976	0.007741	0.008813	0.084167	0.033437	0.002452	259.3288
Los Angeles	2047	LDT2	Aggregated	55	DSL	31965.79	0.007212	0.00821	0.074797	0.020808	0.001697	179.4626
Los Angeles	2047	LHDT1	Aggregated	55	DSL	490190.2	0.020815	0.023696	0.098455	0.04187	0.003517	371.977
Los Angeles	2047	LHDT2	Aggregated	55	DSL	192189.1	0.021539	0.02452	0.105148	0.074802	0.003831	405.2103
Los Angeles	2047	MDV	Aggregated	55	DSL	67340.91	0.002427	0.002763	0.080067	0.006608	0.002224	235.2402
Los Angeles	2047	MH	Aggregated	55	DSL	9610.082	0.020991	0.023897	0.062831	1.455936	0.006689	707.5912
Los Angeles	2047	MHDT	Aggregated	55	DSL	607573.7	0.005661	0.006444	0.035555	0.536833	0.005845	618.7323
Los Angeles	2047	OBUS	Aggregated	55	DSL	36504.94	0.008388	0.009549	0.056089	0.750398	0.007413	784.6837
Los Angeles	2047	SBUS	Aggregated	55	DSL	6018.731	0.005683	0.006469	0.035338	0.531955	0.006161	652.1133
Los Angeles	2047	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2048	HHDT	Aggregated	55	DSL	1313378	0.013431	0.01529	0.094598	1.030324	0.0078	825.6478
Los Angeles	2048	LDA	Aggregated	55	DSL	99528.85	0.002125	0.002419	0.070752	0.005696	0.001283	135.7148
Los Angeles	2048	LDT1	Aggregated	55	DSL	157.9699	0.007569	0.008616	0.081821	0.028499	0.002442	258.305
Los Angeles	2048	LDT2	Aggregated	55	DSL	32022.77	0.007214	0.008212	0.074877	0.0208	0.001695	179.3085
Los Angeles	2048	LHDT1	Aggregated	55	DSL	491769.6	0.020762	0.023636	0.098154	0.038536	0.003511	371.3453
Los Angeles	2048	LHDT2	Aggregated	55	DSL	192914.7	0.02141	0.024374	0.104347	0.06778	0.003824	404.5221
Los Angeles	2048	MDV	Aggregated	55	DSL	67482.27	0.002417	0.002751	0.080026	0.006539	0.002221	234.9374
Los Angeles	2048	MH	Aggregated	55	DSL	9657.305	0.020893	0.023785	0.061675	1.450033	0.006673	705.831
Los Angeles	2048	MHDT	Aggregated	55	DSL	614095	0.00566	0.006444	0.035555	0.536273	0.005831	617.1773
Los Angeles	2048	OBUS	Aggregated	55	DSL	36887.27	0.008386	0.009547	0.056078	0.748666	0.007399	783.2216
Los Angeles	2048	SBUS	Aggregated	55	DSL	6047.753	0.005646	0.006427	0.035334	0.529937	0.006123	648.1411
Los Angeles	2048	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2049	HHDT	Aggregated	55	DSL	1333667	0.01343	0.015289	0.094602	1.029137	0.007785	824.0153
Los Angeles	2049	LDA	Aggregated	55	DSL	99583.98	0.002122	0.002416	0.070748	0.005665	0.001282	135.6623
Los Angeles	2049	LDT1	Aggregated	55	DSL	158.1876	0.007527	0.008569	0.081299	0.027261	0.002437	257.7465

Los Angeles	2049	LDT2	Aggregated	55	DSL	32071.04	0.007216	0.008215	0.074953	0.020797	0.001694	179.1784
Los Angeles	2049	LHDT1	Aggregated	55	DSL	493091.9	0.020722	0.023591	0.097894	0.035875	0.003505	370.7909
Los Angeles	2049	LHDT2	Aggregated	55	DSL	193542.4	0.021303	0.024252	0.103518	0.061697	0.003818	403.9119
Los Angeles	2049	MDV	Aggregated	55	DSL	67603.46	0.002408	0.002742	0.079992	0.006455	0.002219	234.687
Los Angeles	2049	MH	Aggregated	55	DSL	9699.784	0.020805	0.023685	0.060601	1.444902	0.006657	704.1972
Los Angeles	2049	MHDT	Aggregated	55	DSL	620589.8	0.005661	0.006444	0.03556	0.535887	0.005818	615.8266
Los Angeles	2049	OBUS	Aggregated	55	DSL	37265.61	0.008381	0.009541	0.056043	0.745825	0.007385	781.6759
Los Angeles	2049	SBUS	Aggregated	55	DSL	6072.877	0.00564	0.00642	0.035389	0.530459	0.006092	644.7901
Los Angeles	2049	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2050	HHDT	Aggregated	55	DSL	1353961	0.013431	0.01529	0.094615	1.028596	0.007798	825.4236
Los Angeles	2050	LDA	Aggregated	55	DSL	99627.19	0.002119	0.002413	0.070747	0.00563	0.001282	135.6209
Los Angeles	2050	LDT1	Aggregated	55	DSL	158.4343	0.007504	0.008542	0.081029	0.026534	0.002433	257.3193
Los Angeles	2050	LDT2	Aggregated	55	DSL	32113.32	0.007216	0.008215	0.075006	0.020757	0.001693	179.0651
Los Angeles	2050	LHDT1	Aggregated	55	DSL	494226.9	0.02069	0.023554	0.097686	0.033637	0.003501	370.3049
Los Angeles	2050	LHDT2	Aggregated	55	DSL	193988.6	0.02112	0.024043	0.102012	0.051989	0.003812	403.2801
Los Angeles	2050	MDV	Aggregated	55	DSL	67709.96	0.002399	0.002732	0.079949	0.00633	0.002217	234.4778
Los Angeles	2050	MH	Aggregated	55	DSL	9739.624	0.02073	0.0236	0.059663	1.440489	0.006643	702.7116
Los Angeles	2050	MHDT	Aggregated	55	DSL	627078.5	0.005661	0.006445	0.035567	0.535637	0.005817	615.6928
Los Angeles	2050	OBUS	Aggregated	55	DSL	37648.41	0.00837	0.009529	0.055974	0.74173	0.007376	780.7138
Los Angeles	2050	SBUS	Aggregated	55	DSL	6091.594	0.005648	0.00643	0.035473	0.532307	0.00607	642.5455
Los Angeles	2050	UBUS	Aggregated	55	DSL	0	0	0	0	0	0	0
Los Angeles	2022	HHDT	Aggregated	65	DSL	787757.7	0.037736	0.04296	0.176039	2.694371	0.012723	1346.727
Los Angeles	2022	LDA	Aggregated	65	DSL	48532.32	0.012443	0.014165	0.151289	0.080082	0.00205	216.8238
Los Angeles	2022	LDT1	Aggregated	65	DSL	235.5315	0.179177	0.203981	1.570212	1.304678	0.004419	467.4139
Los Angeles	2022	LDT2	Aggregated	65	DSL	13450.53	0.009326	0.010617	0.076195	0.037175	0.002769	292.8614
Los Angeles	2022	LHDT1	Aggregated	65	DSL	454528.1	0.050222	0.057174	0.351708	1.371107	0.004436	469.2237
Los Angeles	2022	LHDT2	Aggregated	65	DSL	176749.7	0.049056	0.055847	0.339422	1.311312	0.004752	502.6475
Los Angeles	2022	MDV	Aggregated	65	DSL	27424.62	0.006677	0.007601	0.107734	0.040495	0.003637	384.67
Los Angeles	2022	MH	Aggregated	65	DSL	6677.849	0.045014	0.051246	0.195075	2.897566	0.008343	882.503
Los Angeles	2022	MHDT	Aggregated	65	DSL	447543.5	0.03985	0.045366	0.197083	1.610496	0.008877	939.6027
Los Angeles	2022	OBUS	Aggregated	65	DSL	28391.72	0.044522	0.050684	0.173376	2.174987	0.011387	1205.258
Los Angeles	2022	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2022	UBUS	Aggregated	65	DSL	18.70082	0.000495	0.035384	0.043065	0.264685	0.0125	1322.252
Los Angeles	2023	HHDT	Aggregated	65	DSL	799268.1	0.01991	0.022666	0.134069	2.060046	0.012308	1302.772

Los Angeles	2023	LDA	Aggregated	65	DSL	50688.91	0.010517	0.011973	0.135918	0.065436	0.001996	211.1015
Los Angeles	2023	LDT1	Aggregated	65	DSL	217.9648	0.16994	0.193466	1.490023	1.233847	0.004359	461.0612
Los Angeles	2023	LDT2	Aggregated	65	DSL	14367.88	0.00863	0.009825	0.073429	0.03335	0.002693	284.8583
Los Angeles	2023	LHDT1	Aggregated	65	DSL	479103	0.045511	0.051811	0.31168	1.163628	0.004367	461.9479
Los Angeles	2023	LHDT2	Aggregated	65	DSL	186539.6	0.044694	0.050881	0.302834	1.120057	0.004679	494.9117
Los Angeles	2023	MDV	Aggregated	65	DSL	29266.79	0.006022	0.006856	0.10253	0.034839	0.003534	373.8603
Los Angeles	2023	MH	Aggregated	65	DSL	6951.746	0.042254	0.048103	0.181118	2.723407	0.008242	871.8403
Los Angeles	2023	MHDT	Aggregated	65	DSL	459007.7	0.008278	0.009424	0.049334	0.997298	0.008655	916.0903
Los Angeles	2023	OBUS	Aggregated	65	DSL	29063.74	0.012715	0.014475	0.084541	1.464299	0.011213	1186.824
Los Angeles	2023	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2023	UBUS	Aggregated	65	DSL	18.70082	0.000495	0.035384	0.043065	0.264685	0.0125	1322.252
Los Angeles	2024	HHDT	Aggregated	65	DSL	728804.8	0.019918	0.022676	0.134462	2.034841	0.012088	1279.441
Los Angeles	2024	LDA	Aggregated	65	DSL	47924.1	0.008547	0.00973	0.122333	0.052693	0.001941	205.3442
Los Angeles	2024	LDT1	Aggregated	65	DSL	184.1136	0.158071	0.179953	1.401116	1.15731	0.00429	453.7784
Los Angeles	2024	LDT2	Aggregated	65	DSL	13833.49	0.007723	0.008792	0.070115	0.029239	0.002618	276.8998
Los Angeles	2024	LHDT1	Aggregated	65	DSL	457373.1	0.041563	0.047317	0.278197	0.991915	0.004298	454.6272
Los Angeles	2024	LHDT2	Aggregated	65	DSL	178207.7	0.041056	0.046739	0.272152	0.961663	0.004605	487.138
Los Angeles	2024	MDV	Aggregated	65	DSL	28191.36	0.00556	0.00633	0.09887	0.030586	0.003436	363.4213
Los Angeles	2024	MH	Aggregated	65	DSL	6087.028	0.039881	0.045402	0.169165	2.578795	0.00811	857.8617
Los Angeles	2024	MHDT	Aggregated	65	DSL	397785.1	0.008283	0.00943	0.049617	0.994959	0.008519	901.7114
Los Angeles	2024	OBUS	Aggregated	65	DSL	25867.38	0.013025	0.014828	0.086736	1.488452	0.011156	1180.789
Los Angeles	2024	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2024	UBUS	Aggregated	65	DSL	16.16466	0.000495	0.035384	0.043065	0.264685	0.0125	1322.252
Los Angeles	2025	HHDT	Aggregated	65	DSL	736699.9	0.019847	0.022594	0.13428	2.00124	0.011841	1253.364
Los Angeles	2025	LDA	Aggregated	65	DSL	49428	0.00734	0.008356	0.112333	0.04291	0.001887	199.6093
Los Angeles	2025	LDT1	Aggregated	65	DSL	171.6395	0.148055	0.16855	1.315082	1.081956	0.004213	445.6169
Los Angeles	2025	LDT2	Aggregated	65	DSL	14494.45	0.007366	0.008386	0.068525	0.026361	0.002543	269.0374
Los Angeles	2025	LHDT1	Aggregated	65	DSL	475877	0.038219	0.043509	0.249801	0.847164	0.004228	447.2447
Los Angeles	2025	LHDT2	Aggregated	65	DSL	185549	0.038015	0.043278	0.246436	0.829181	0.004531	479.3299
Los Angeles	2025	MDV	Aggregated	65	DSL	29536.94	0.005093	0.005798	0.09548	0.026624	0.003337	353.036
Los Angeles	2025	MH	Aggregated	65	DSL	6275.801	0.037841	0.04308	0.158785	2.452606	0.007984	844.5477
Los Angeles	2025	MHDT	Aggregated	65	DSL	405516	0.00828	0.009426	0.049824	0.99061	0.008377	886.7301
Los Angeles	2025	OBUS	Aggregated	65	DSL	26409.56	0.012935	0.014725	0.08611	1.451736	0.0109	1153.704
Los Angeles	2025	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0

Los Angeles	2025	UBUS	Aggregated	65	DSL	10.2941	0.000495	0.035384	0.043065	0.264685	0.0125	1322.252
Los Angeles	2026	HHDT	Aggregated	65	DSL	744937.2	0.019723	0.022453	0.133745	1.962183	0.011588	1226.569
Los Angeles	2026	LDA	Aggregated	65	DSL	50629.89	0.006184	0.00704	0.103356	0.03414	0.001841	194.6935
Los Angeles	2026	LDT1	Aggregated	65	DSL	154.4756	0.129352	0.147259	1.194043	0.962336	0.004121	435.936
Los Angeles	2026	LDT2	Aggregated	65	DSL	15061.36	0.007238	0.00824	0.068332	0.025003	0.002481	262.4852
Los Angeles	2026	LHDT1	Aggregated	65	DSL	493044.7	0.035341	0.040234	0.225426	0.723565	0.004158	439.8214
Los Angeles	2026	LHDT2	Aggregated	65	DSL	192326.6	0.035425	0.040329	0.224409	0.716955	0.004457	471.4714
Los Angeles	2026	MDV	Aggregated	65	DSL	30684.24	0.004658	0.005303	0.092522	0.023107	0.003254	344.1748
Los Angeles	2026	MH	Aggregated	65	DSL	6451.126	0.03602	0.041006	0.149387	2.341647	0.007873	832.7743
Los Angeles	2026	MHDT	Aggregated	65	DSL	413255.6	0.008265	0.009409	0.04994	0.98312	0.008241	872.3158
Los Angeles	2026	OBUS	Aggregated	65	DSL	26957.96	0.012858	0.014638	0.085579	1.420138	0.010668	1129.142
Los Angeles	2026	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2026	UBUS	Aggregated	65	DSL	10.2941	0.000495	0.035384	0.043065	0.264685	0.0125	1322.252
Los Angeles	2027	HHDT	Aggregated	65	DSL	754804.7	0.01958	0.02229	0.133059	1.919762	0.011315	1197.71
Los Angeles	2027	LDA	Aggregated	65	DSL	51759.94	0.005111	0.005818	0.095339	0.026378	0.0018	190.4313
Los Angeles	2027	LDT1	Aggregated	65	DSL	131.7136	0.094135	0.107167	0.999902	0.756055	0.003995	422.5541
Los Angeles	2027	LDT2	Aggregated	65	DSL	15586.81	0.006953	0.007915	0.067234	0.022852	0.002426	256.6696
Los Angeles	2027	LHDT1	Aggregated	65	DSL	508818.2	0.032898	0.037452	0.204663	0.619046	0.004088	432.4124
Los Angeles	2027	LHDT2	Aggregated	65	DSL	198538.7	0.033239	0.03784	0.205697	0.622539	0.004383	463.6264
Los Angeles	2027	MDV	Aggregated	65	DSL	31758.91	0.004116	0.004686	0.08906	0.019135	0.00318	336.4147
Los Angeles	2027	MH	Aggregated	65	DSL	6610.329	0.034345	0.039099	0.140837	2.242231	0.007757	820.5212
Los Angeles	2027	MHDT	Aggregated	65	DSL	421726.1	0.008244	0.009386	0.049982	0.972592	0.008097	857.0713
Los Angeles	2027	OBUS	Aggregated	65	DSL	27568.65	0.012773	0.014541	0.084989	1.389429	0.010436	1104.599
Los Angeles	2027	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2027	UBUS	Aggregated	65	DSL	10.2941	0.000495	0.035384	0.043065	0.264685	0.0125	1322.252
Los Angeles	2028	HHDT	Aggregated	65	DSL	761201.7	0.019445	0.022136	0.132398	1.883669	0.011048	1169.393
Los Angeles	2028	LDA	Aggregated	65	DSL	52753.13	0.004426	0.005039	0.088789	0.020498	0.001765	186.75
Los Angeles	2028	LDT1	Aggregated	65	DSL	120.419	0.08061	0.091769	0.862901	0.634929	0.003885	410.9282
Los Angeles	2028	LDT2	Aggregated	65	DSL	16060.24	0.006903	0.007859	0.067377	0.022123	0.00238	251.7181
Los Angeles	2028	LHDT1	Aggregated	65	DSL	523380.9	0.030811	0.035076	0.186893	0.529992	0.004026	425.8955
Los Angeles	2028	LHDT2	Aggregated	65	DSL	204301.5	0.031397	0.035744	0.189897	0.543212	0.004317	456.7036
Los Angeles	2028	MDV	Aggregated	65	DSL	32731.72	0.003808	0.004335	0.086565	0.016373	0.003117	329.7668
Los Angeles	2028	MH	Aggregated	65	DSL	6753.199	0.032849	0.037396	0.133187	2.153834	0.00765	809.1717
Los Angeles	2028	MHDT	Aggregated	65	DSL	427972.8	0.008235	0.009375	0.050069	0.967921	0.007965	843.063

Los Angeles	2028	OBUS	Aggregated	65	DSL	28021.32	0.012751	0.014517	0.08482	1.376719	0.010246	1084.547
Los Angeles	2028	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2028	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2029	HHDT	Aggregated	65	DSL	767642.7	0.019305	0.021977	0.131706	1.85243	0.010801	1143.231
Los Angeles	2029	LDA	Aggregated	65	DSL	53625.31	0.003747	0.004265	0.082551	0.016463	0.001736	183.6033
Los Angeles	2029	LDT1	Aggregated	65	DSL	111.1869	0.060066	0.068381	0.667749	0.529126	0.003791	401.0028
Los Angeles	2029	LDT2	Aggregated	65	DSL	16470.84	0.006845	0.007793	0.06741	0.021604	0.002338	247.2951
Los Angeles	2029	LHDT1	Aggregated	65	DSL	536961	0.029044	0.033064	0.171755	0.454574	0.003973	420.2819
Los Angeles	2029	LHDT2	Aggregated	65	DSL	209678.3	0.029848	0.03398	0.176551	0.476568	0.004261	450.6921
Los Angeles	2029	MDV	Aggregated	65	DSL	33601.16	0.003484	0.003966	0.083969	0.014266	0.003063	323.9679
Los Angeles	2029	MH	Aggregated	65	DSL	6885.068	0.03149	0.03585	0.126236	2.074182	0.007553	798.9865
Los Angeles	2029	MHDT	Aggregated	65	DSL	434035.1	0.008227	0.009366	0.050142	0.964619	0.007844	830.3164
Los Angeles	2029	OBUS	Aggregated	65	DSL	28475.67	0.012756	0.014522	0.084823	1.373656	0.010088	1067.809
Los Angeles	2029	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2029	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2030	HHDT	Aggregated	65	DSL	774146.4	0.019183	0.021838	0.131121	1.826061	0.010572	1119.021
Los Angeles	2030	LDA	Aggregated	65	DSL	54392.73	0.003206	0.00365	0.077619	0.013319	0.00171	180.8433
Los Angeles	2030	LDT1	Aggregated	65	DSL	104.8542	0.043966	0.050052	0.511877	0.43854	0.003698	391.139
Los Angeles	2030	LDT2	Aggregated	65	DSL	16829.68	0.006792	0.007732	0.067432	0.02116	0.0023	243.3319
Los Angeles	2030	LHDT1	Aggregated	65	DSL	549638.1	0.027526	0.031336	0.158843	0.389707	0.003927	415.3829
Los Angeles	2030	LHDT2	Aggregated	65	DSL	214671.8	0.028528	0.032478	0.165319	0.419764	0.004211	445.4095
Los Angeles	2030	MDV	Aggregated	65	DSL	34392.6	0.003284	0.003739	0.082486	0.012843	0.003015	318.9254
Los Angeles	2030	MH	Aggregated	65	DSL	7009.164	0.03028	0.034472	0.120039	2.003089	0.007468	789.9373
Los Angeles	2030	MHDT	Aggregated	65	DSL	439896.7	0.008216	0.009354	0.050184	0.960885	0.007733	818.5071
Los Angeles	2030	OBUS	Aggregated	65	DSL	28902.74	0.012783	0.014552	0.084976	1.374373	0.009959	1054.146
Los Angeles	2030	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2030	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2031	HHDT	Aggregated	65	DSL	698779.2	0.019077	0.021718	0.130625	1.80335	0.010363	1096.929
Los Angeles	2031	LDA	Aggregated	65	DSL	51753.87	0.002982	0.003395	0.075581	0.011766	0.001688	178.5202
Los Angeles	2031	LDT1	Aggregated	65	DSL	94.67722	0.032569	0.037077	0.398447	0.366363	0.00361	381.8873
Los Angeles	2031	LDT2	Aggregated	65	DSL	16100.86	0.00676	0.007696	0.067594	0.020857	0.002267	239.7569
Los Angeles	2031	LHDT1	Aggregated	65	DSL	518485.7	0.026244	0.029877	0.147983	0.334809	0.003886	411.0767
Los Angeles	2031	LHDT2	Aggregated	65	DSL	202524.1	0.027399	0.031192	0.155855	0.371441	0.004167	440.7432
Los Angeles	2031	MDV	Aggregated	65	DSL	32977.42	0.003107	0.003537	0.081177	0.011631	0.002973	314.4654

Los Angeles	2031	MH	Aggregated	65	DSL	5857.722	0.029111	0.033141	0.114097	1.939383	0.007391	781.8371
Los Angeles	2031	MHDT	Aggregated	65	DSL	365873.2	0.008204	0.00934	0.050205	0.957673	0.007631	807.7198
Los Angeles	2031	OBUS	Aggregated	65	DSL	25067.37	0.013013	0.014814	0.086679	1.386572	0.009942	1052.353
Los Angeles	2031	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2031	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2032	HHDT	Aggregated	65	DSL	703891.6	0.018975	0.021602	0.130144	1.778894	0.010176	1077.114
Los Angeles	2032	LDA	Aggregated	65	DSL	52301.53	0.002705	0.003079	0.07307	0.010138	0.001668	176.4158
Los Angeles	2032	LDT1	Aggregated	65	DSL	92.6273	0.026221	0.029851	0.330642	0.313991	0.003532	373.5866
Los Angeles	2032	LDT2	Aggregated	65	DSL	16350.67	0.006758	0.007693	0.06796	0.020709	0.002236	236.5496
Los Angeles	2032	LHDT1	Aggregated	65	DSL	528867	0.025181	0.028667	0.139139	0.288871	0.00385	407.2786
Los Angeles	2032	LHDT2	Aggregated	65	DSL	206556.2	0.026392	0.030046	0.147573	0.329062	0.004127	436.5922
Los Angeles	2032	MDV	Aggregated	65	DSL	33574.3	0.002985	0.003399	0.080338	0.010757	0.002936	310.5233
Los Angeles	2032	MH	Aggregated	65	DSL	5947.301	0.028114	0.032006	0.108869	1.880852	0.007323	774.6125
Los Angeles	2032	MHDT	Aggregated	65	DSL	369778.3	0.008194	0.009328	0.050224	0.952691	0.007542	798.3107
Los Angeles	2032	OBUS	Aggregated	65	DSL	25410.73	0.013015	0.014817	0.086676	1.377845	0.009842	1041.787
Los Angeles	2032	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2032	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2033	HHDT	Aggregated	65	DSL	709041.5	0.018888	0.021503	0.129729	1.756544	0.010012	1059.737
Los Angeles	2033	LDA	Aggregated	65	DSL	52789.5	0.002586	0.002943	0.071998	0.009312	0.001651	174.6254
Los Angeles	2033	LDT1	Aggregated	65	DSL	91.6618	0.023071	0.026265	0.292852	0.277103	0.003464	366.4151
Los Angeles	2033	LDT2	Aggregated	65	DSL	16562.23	0.006753	0.007687	0.068251	0.020578	0.002209	233.6535
Los Angeles	2033	LHDT1	Aggregated	65	DSL	538590.9	0.024277	0.027637	0.131685	0.249518	0.003818	403.9005
Los Angeles	2033	LHDT2	Aggregated	65	DSL	210334.5	0.025532	0.029066	0.140621	0.292996	0.004092	432.8937
Los Angeles	2033	MDV	Aggregated	65	DSL	34107.34	0.002884	0.003283	0.07966	0.010057	0.002902	307.0209
Los Angeles	2033	MH	Aggregated	65	DSL	6031.889	0.027156	0.030916	0.103854	1.826252	0.007261	768.0846
Los Angeles	2033	MHDT	Aggregated	65	DSL	373626	0.008187	0.009321	0.050247	0.947768	0.007463	789.9628
Los Angeles	2033	OBUS	Aggregated	65	DSL	25758.49	0.012999	0.014798	0.086548	1.365343	0.009747	1031.725
Los Angeles	2033	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2033	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2034	HHDT	Aggregated	65	DSL	714187.8	0.018799	0.021401	0.129286	1.734362	0.009864	1044.043
Los Angeles	2034	LDA	Aggregated	65	DSL	53209.17	0.002481	0.002824	0.071056	0.008631	0.001636	173.0552
Los Angeles	2034	LDT1	Aggregated	65	DSL	90.90898	0.020391	0.023214	0.260283	0.244582	0.003402	359.9147
Los Angeles	2034	LDT2	Aggregated	65	DSL	16741.6	0.006752	0.007686	0.068527	0.020484	0.002184	231.0666
Los Angeles	2034	LHDT1	Aggregated	65	DSL	547722	0.023539	0.026798	0.125689	0.217122	0.00379	400.8968

Los Angeles	2034	LHDT2	Aggregated	65	DSL	213887.3	0.024786	0.028217	0.134749	0.262437	0.004061	429.5969
Los Angeles	2034	MDV	Aggregated	65	DSL	34584.8	0.002798	0.003186	0.07909	0.00948	0.002873	303.9212
Los Angeles	2034	MH	Aggregated	65	DSL	6111.25	0.026254	0.029888	0.099085	1.776035	0.007205	762.1884
Los Angeles	2034	MHDT	Aggregated	65	DSL	377376	0.008176	0.009308	0.050235	0.941679	0.00739	782.1761
Los Angeles	2034	OBUS	Aggregated	65	DSL	26084.2	0.012955	0.014749	0.086243	1.348657	0.009653	1021.747
Los Angeles	2034	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2034	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2035	HHDT	Aggregated	65	DSL	719365	0.018725	0.021317	0.128903	1.714787	0.009732	1030.152
Los Angeles	2035	LDA	Aggregated	65	DSL	53565.49	0.002393	0.002724	0.070262	0.00808	0.001623	171.6893
Los Angeles	2035	LDT1	Aggregated	65	DSL	89.7971	0.016111	0.018341	0.214371	0.208596	0.003344	353.7096
Los Angeles	2035	LDT2	Aggregated	65	DSL	16895.25	0.006758	0.007694	0.068829	0.020435	0.002163	228.799
Los Angeles	2035	LHDT1	Aggregated	65	DSL	556093.4	0.02288	0.026047	0.120261	0.188008	0.003764	398.1862
Los Angeles	2035	LHDT2	Aggregated	65	DSL	217125.1	0.024102	0.027439	0.129279	0.234754	0.004033	426.6024
Los Angeles	2035	MDV	Aggregated	65	DSL	35003.19	0.002714	0.003089	0.0785	0.008959	0.002847	301.1604
Los Angeles	2035	MH	Aggregated	65	DSL	6186.51	0.025437	0.028958	0.094681	1.730469	0.007155	756.8856
Los Angeles	2035	MHDT	Aggregated	65	DSL	381084.2	0.008161	0.009291	0.050192	0.934993	0.007323	775.1561
Los Angeles	2035	OBUS	Aggregated	65	DSL	26429.07	0.012901	0.014687	0.085864	1.331776	0.009562	1012.139
Los Angeles	2035	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2035	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2036	HHDT	Aggregated	65	DSL	725680.7	0.018669	0.021254	0.12863	1.698617	0.00962	1018.295
Los Angeles	2036	LDA	Aggregated	65	DSL	53870.95	0.00231	0.00263	0.069504	0.007591	0.001612	170.5047
Los Angeles	2036	LDT1	Aggregated	65	DSL	89.27763	0.013915	0.015842	0.187905	0.182441	0.003293	348.3499
Los Angeles	2036	LDT2	Aggregated	65	DSL	17030.44	0.006762	0.007698	0.069072	0.020386	0.002144	226.8391
Los Angeles	2036	LHDT1	Aggregated	65	DSL	563846.6	0.022324	0.025415	0.115663	0.163142	0.003741	395.7492
Los Angeles	2036	LHDT2	Aggregated	65	DSL	220225.3	0.023597	0.026863	0.125271	0.21192	0.004008	423.9792
Los Angeles	2036	MDV	Aggregated	65	DSL	35377.63	0.002644	0.00301	0.07802	0.00854	0.002824	298.7247
Los Angeles	2036	MH	Aggregated	65	DSL	6259.366	0.024701	0.028121	0.090655	1.688294	0.00711	752.0976
Los Angeles	2036	MHDT	Aggregated	65	DSL	385390.1	0.008148	0.009276	0.050148	0.928297	0.007264	768.8635
Los Angeles	2036	OBUS	Aggregated	65	DSL	26763.82	0.012844	0.014622	0.085469	1.314878	0.009478	1003.274
Los Angeles	2036	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2036	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2037	HHDT	Aggregated	65	DSL	732047.1	0.018627	0.021205	0.128415	1.685685	0.00952	1007.705
Los Angeles	2037	LDA	Aggregated	65	DSL	54128.98	0.002245	0.002555	0.068903	0.00721	0.001602	169.4949
Los Angeles	2037	LDT1	Aggregated	65	DSL	89.12567	0.0129	0.014686	0.172989	0.163218	0.00325	343.8187

Los Angeles	2037	LDT2	Aggregated	65	DSL	17146.11	0.006767	0.007704	0.069296	0.020354	0.002129	225.1562
Los Angeles	2037	LHDT1	Aggregated	65	DSL	570804.4	0.021822	0.024843	0.111477	0.140638	0.00372	393.5259
Los Angeles	2037	LHDT2	Aggregated	65	DSL	223005.1	0.023129	0.026331	0.121513	0.190839	0.003986	421.586
Los Angeles	2037	MDV	Aggregated	65	DSL	35707.56	0.00258	0.002937	0.077566	0.008175	0.002804	296.5761
Los Angeles	2037	MH	Aggregated	65	DSL	6328.273	0.023986	0.027306	0.086772	1.648217	0.007069	747.7193
Los Angeles	2037	MHDT	Aggregated	65	DSL	389625.5	0.008137	0.009263	0.050103	0.922556	0.007208	762.9935
Los Angeles	2037	OBUS	Aggregated	65	DSL	27103.54	0.012792	0.014563	0.085112	1.29954	0.009403	995.2413
Los Angeles	2037	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2037	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2038	HHDT	Aggregated	65	DSL	738449.3	0.018595	0.021169	0.128257	1.675225	0.009432	998.3822
Los Angeles	2038	LDA	Aggregated	65	DSL	54344.16	0.002193	0.002497	0.06842	0.006896	0.001594	168.6412
Los Angeles	2038	LDT1	Aggregated	65	DSL	88.90257	0.012075	0.013746	0.159353	0.143652	0.003208	339.3927
Los Angeles	2038	LDT2	Aggregated	65	DSL	17245.23	0.006771	0.007708	0.069482	0.020321	0.002115	223.7269
Los Angeles	2038	LHDT1	Aggregated	65	DSL	577100.9	0.021412	0.024376	0.108033	0.122054	0.003701	391.518
Los Angeles	2038	LHDT2	Aggregated	65	DSL	225471.7	0.022716	0.025861	0.11821	0.172169	0.003965	419.394
Los Angeles	2038	MDV	Aggregated	65	DSL	35997.53	0.002528	0.002878	0.077197	0.007859	0.002786	294.6935
Los Angeles	2038	MH	Aggregated	65	DSL	6392.209	0.023312	0.026539	0.083119	1.611125	0.007031	743.7203
Los Angeles	2038	MHDT	Aggregated	65	DSL	393774.3	0.008126	0.00925	0.05006	0.917406	0.007158	757.7085
Los Angeles	2038	OBUS	Aggregated	65	DSL	27451.63	0.012749	0.014514	0.084807	1.288033	0.009335	988.095
Los Angeles	2038	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2038	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2039	HHDT	Aggregated	65	DSL	744889.3	0.018571	0.021142	0.128148	1.666851	0.009355	990.2387
Los Angeles	2039	LDA	Aggregated	65	DSL	54525.76	0.002151	0.002448	0.068021	0.006641	0.001588	167.9279
Los Angeles	2039	LDT1	Aggregated	65	DSL	88.81174	0.011407	0.012986	0.148348	0.127807	0.003173	335.67
Los Angeles	2039	LDT2	Aggregated	65	DSL	17331.89	0.006774	0.007712	0.069637	0.020285	0.002104	222.5311
Los Angeles	2039	LHDT1	Aggregated	65	DSL	582787.6	0.021056	0.023971	0.105078	0.105853	0.003684	389.7009
Los Angeles	2039	LHDT2	Aggregated	65	DSL	227645.7	0.022297	0.025384	0.114949	0.153527	0.003946	417.3802
Los Angeles	2039	MDV	Aggregated	65	DSL	36252.01	0.002483	0.002826	0.076862	0.007567	0.00277	293.0467
Los Angeles	2039	MH	Aggregated	65	DSL	6452.915	0.022715	0.025859	0.079749	1.578225	0.006997	740.089
Los Angeles	2039	MHDT	Aggregated	65	DSL	397841	0.008115	0.009238	0.050013	0.912749	0.007113	752.9456
Los Angeles	2039	OBUS	Aggregated	65	DSL	27782	0.012709	0.014468	0.084523	1.278333	0.009274	981.669
Los Angeles	2039	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2039	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2040	HHDT	Aggregated	65	DSL	751351	0.018554	0.021123	0.12808	1.659748	0.009288	983.1156

Los Angeles	2040	LDA	Aggregated	65	DSL	54679.81	0.002113	0.002406	0.067653	0.006372	0.001582	167.3349
Los Angeles	2040	LDT1	Aggregated	65	DSL	88.76945	0.010816	0.012313	0.138603	0.113748	0.003142	332.4053
Los Angeles	2040	LDT2	Aggregated	65	DSL	17409.45	0.006778	0.007716	0.069782	0.020267	0.002094	221.547
Los Angeles	2040	LHDT1	Aggregated	65	DSL	587928	0.020753	0.023626	0.102566	0.092007	0.003669	388.0588
Los Angeles	2040	LHDT2	Aggregated	65	DSL	229715.5	0.022016	0.025064	0.112801	0.140574	0.003929	415.6282
Los Angeles	2040	MDV	Aggregated	65	DSL	36475.36	0.002442	0.00278	0.076548	0.007297	0.002757	291.6082
Los Angeles	2040	MH	Aggregated	65	DSL	6510.496	0.022191	0.025263	0.076661	1.549367	0.006965	736.7187
Los Angeles	2040	MHDT	Aggregated	65	DSL	401846	0.008105	0.009226	0.049971	0.908805	0.007073	748.696
Los Angeles	2040	OBUS	Aggregated	65	DSL	28112.14	0.012684	0.01444	0.084339	1.272146	0.009223	976.2176
Los Angeles	2040	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2040	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2041	HHDT	Aggregated	65	DSL	758121	0.018542	0.021108	0.128042	1.653841	0.00923	976.9801
Los Angeles	2041	LDA	Aggregated	65	DSL	54805.15	0.002085	0.002373	0.067382	0.006183	0.001577	166.8544
Los Angeles	2041	LDT1	Aggregated	65	DSL	88.39224	0.009981	0.011363	0.124801	0.09399	0.003106	328.5822
Los Angeles	2041	LDT2	Aggregated	65	DSL	17477.01	0.00678	0.007719	0.069912	0.02025	0.002087	220.7488
Los Angeles	2041	LHDT1	Aggregated	65	DSL	592470.5	0.02051	0.023349	0.100597	0.080739	0.003655	386.5815
Los Angeles	2041	LHDT2	Aggregated	65	DSL	231548.2	0.021777	0.024791	0.111167	0.129556	0.003914	414.0511
Los Angeles	2041	MDV	Aggregated	65	DSL	36667.21	0.002407	0.00274	0.076285	0.007082	0.002745	290.3687
Los Angeles	2041	MH	Aggregated	65	DSL	6564.1	0.021716	0.024723	0.073746	1.523311	0.006935	733.6185
Los Angeles	2041	MHDT	Aggregated	65	DSL	405944	0.008096	0.009217	0.049934	0.905191	0.007036	744.76
Los Angeles	2041	OBUS	Aggregated	65	DSL	28440.04	0.012679	0.014434	0.084287	1.270066	0.00918	971.7266
Los Angeles	2041	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2041	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2042	HHDT	Aggregated	65	DSL	764908.4	0.018533	0.021099	0.128026	1.649028	0.00918	971.7325
Los Angeles	2042	LDA	Aggregated	65	DSL	54920.01	0.002062	0.002348	0.067174	0.006035	0.001574	166.4691
Los Angeles	2042	LDT1	Aggregated	65	DSL	88.24813	0.009397	0.010698	0.115158	0.080123	0.003078	325.6425
Los Angeles	2042	LDT2	Aggregated	65	DSL	17539.73	0.006783	0.007722	0.070023	0.020231	0.002081	220.1014
Los Angeles	2042	LHDT1	Aggregated	65	DSL	596535.6	0.020297	0.023106	0.098833	0.070849	0.003642	385.2398
Los Angeles	2042	LHDT2	Aggregated	65	DSL	233263.5	0.021588	0.024576	0.109928	0.12071	0.003901	412.6573
Los Angeles	2042	MDV	Aggregated	65	DSL	36840.57	0.002376	0.002705	0.076057	0.006898	0.002735	289.3068
Los Angeles	2042	MH	Aggregated	65	DSL	6615.278	0.021291	0.024239	0.071035	1.500064	0.006908	730.7703
Los Angeles	2042	MHDT	Aggregated	65	DSL	409993.1	0.008089	0.009209	0.049908	0.902028	0.007003	741.2739
Los Angeles	2042	OBUS	Aggregated	65	DSL	28771.55	0.012686	0.014443	0.084325	1.270939	0.009146	968.1321
Los Angeles	2042	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0

Los Angeles	2042	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2043	HHDT	Aggregated	65	DSL	771710.3	0.018525	0.021089	0.128015	1.644718	0.009137	967.1268
Los Angeles	2043	LDA	Aggregated	65	DSL	55014.4	0.002045	0.002328	0.06701	0.005906	0.001571	166.1638
Los Angeles	2043	LDT1	Aggregated	65	DSL	88.07833	0.008841	0.010065	0.105982	0.066938	0.003053	322.9272
Los Angeles	2043	LDT2	Aggregated	65	DSL	17595.3	0.006785	0.007725	0.070129	0.020219	0.002076	219.5858
Los Angeles	2043	LHDT1	Aggregated	65	DSL	600184.5	0.020145	0.022934	0.097582	0.0636	0.003631	384.0607
Los Angeles	2043	LHDT2	Aggregated	65	DSL	234875.7	0.021461	0.024432	0.109159	0.114502	0.00389	411.4613
Los Angeles	2043	MDV	Aggregated	65	DSL	36989.25	0.002351	0.002677	0.075881	0.006769	0.002726	288.4022
Los Angeles	2043	MH	Aggregated	65	DSL	6662.231	0.020901	0.023795	0.06847	1.478896	0.006883	728.0934
Los Angeles	2043	MHDT	Aggregated	65	DSL	413994.4	0.008084	0.009204	0.049889	0.899245	0.006973	738.0798
Los Angeles	2043	OBUS	Aggregated	65	DSL	29090.61	0.012706	0.014465	0.084446	1.273633	0.009119	965.2787
Los Angeles	2043	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2043	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2044	HHDT	Aggregated	65	DSL	778512.6	0.018515	0.021078	0.12801	1.640478	0.009099	963.1626
Los Angeles	2044	LDA	Aggregated	65	DSL	55094.24	0.002031	0.002313	0.066888	0.005802	0.001569	165.925
Los Angeles	2044	LDT1	Aggregated	65	DSL	88.04667	0.008473	0.009646	0.099926	0.058188	0.003033	320.857
Los Angeles	2044	LDT2	Aggregated	65	DSL	17644.6	0.006788	0.007727	0.070227	0.020212	0.002072	219.1717
Los Angeles	2044	LHDT1	Aggregated	65	DSL	603352	0.019992	0.02276	0.096325	0.056421	0.003621	382.9953
Los Angeles	2044	LHDT2	Aggregated	65	DSL	236182.6	0.021196	0.024131	0.107512	0.103025	0.003879	410.3079
Los Angeles	2044	MDV	Aggregated	65	DSL	37119.67	0.002331	0.002653	0.075741	0.00666	0.002719	287.6372
Los Angeles	2044	MH	Aggregated	65	DSL	6705.646	0.020559	0.023405	0.066089	1.460275	0.00686	725.6125
Los Angeles	2044	MHDT	Aggregated	65	DSL	417961.4	0.008081	0.0092	0.049879	0.897052	0.006946	735.2263
Los Angeles	2044	OBUS	Aggregated	65	DSL	29414.86	0.012724	0.014486	0.084556	1.276187	0.009097	962.8867
Los Angeles	2044	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2044	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2045	HHDT	Aggregated	65	DSL	785323.5	0.018507	0.021069	0.128007	1.636754	0.009067	959.72
Los Angeles	2045	LDA	Aggregated	65	DSL	55167.71	0.002021	0.002301	0.066802	0.00572	0.001567	165.7404
Los Angeles	2045	LDT1	Aggregated	65	DSL	88.10831	0.008223	0.009362	0.095828	0.052222	0.003018	319.2642
Los Angeles	2045	LDT2	Aggregated	65	DSL	17690.41	0.00679	0.00773	0.070319	0.020207	0.002069	218.8393
Los Angeles	2045	LHDT1	Aggregated	65	DSL	606338.8	0.019872	0.022623	0.095377	0.050677	0.003612	382.0737
Los Angeles	2045	LHDT2	Aggregated	65	DSL	237448.7	0.020985	0.02389	0.106203	0.093754	0.00387	409.3231
Los Angeles	2045	MDV	Aggregated	65	DSL	37237.27	0.002314	0.002634	0.075639	0.006582	0.002713	286.9932
Los Angeles	2045	MH	Aggregated	65	DSL	6745.608	0.020217	0.023016	0.063822	1.442219	0.006838	723.2785
Los Angeles	2045	MHDT	Aggregated	65	DSL	421898.7	0.00808	0.009198	0.049879	0.895624	0.006922	732.7181

Los Angeles	2045	OBUS	Aggregated	65	DSL	29722.92	0.01274	0.014503	0.084654	1.27791	0.009078	960.9101
Los Angeles	2045	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2045	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2046	HHDT	Aggregated	65	DSL	793447.6	0.018499	0.02106	0.128	1.633455	0.00904	956.885
Los Angeles	2046	LDA	Aggregated	65	DSL	55223.54	0.002014	0.002293	0.066746	0.005658	0.001566	165.5992
Los Angeles	2046	LDT1	Aggregated	65	DSL	88.15635	0.008012	0.009122	0.092376	0.047187	0.003005	317.8774
Los Angeles	2046	LDT2	Aggregated	65	DSL	17729.63	0.006792	0.007732	0.070404	0.020201	0.002066	218.5715
Los Angeles	2046	LHDT1	Aggregated	65	DSL	608912.5	0.019762	0.022498	0.094524	0.045464	0.003604	381.2493
Los Angeles	2046	LHDT2	Aggregated	65	DSL	238563.1	0.020746	0.023618	0.104717	0.083502	0.003861	408.4383
Los Angeles	2046	MDV	Aggregated	65	DSL	37336.06	0.0023	0.002619	0.075556	0.006503	0.002708	286.4557
Los Angeles	2046	MH	Aggregated	65	DSL	6783.501	0.019964	0.022728	0.061949	1.428375	0.006818	721.1625
Los Angeles	2046	MHDT	Aggregated	65	DSL	426571.8	0.008079	0.009197	0.049879	0.894433	0.006901	730.448
Los Angeles	2046	OBUS	Aggregated	65	DSL	30045.43	0.012748	0.014513	0.084703	1.278575	0.009061	959.0984
Los Angeles	2046	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2046	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2047	HHDT	Aggregated	65	DSL	801592.8	0.018492	0.021051	0.127988	1.630372	0.009017	954.4307
Los Angeles	2047	LDA	Aggregated	65	DSL	55276.37	0.002007	0.002285	0.066697	0.005591	0.001564	165.4896
Los Angeles	2047	LDT1	Aggregated	65	DSL	87.81435	0.007448	0.008479	0.083019	0.033827	0.002983	315.5208
Los Angeles	2047	LDT2	Aggregated	65	DSL	17766.44	0.006794	0.007735	0.070483	0.020195	0.002064	218.3491
Los Angeles	2047	LHDT1	Aggregated	65	DSL	611280.2	0.019689	0.022414	0.093922	0.041774	0.003597	380.5282
Los Angeles	2047	LHDT2	Aggregated	65	DSL	239664.9	0.020611	0.023464	0.103644	0.077294	0.003854	407.6962
Los Angeles	2047	MDV	Aggregated	65	DSL	37427.77	0.002289	0.002606	0.075504	0.006444	0.002704	286.0124
Los Angeles	2047	MH	Aggregated	65	DSL	6820.625	0.019754	0.022489	0.060378	1.416801	0.006799	719.2418
Los Angeles	2047	MHDT	Aggregated	65	DSL	431217.2	0.008078	0.009196	0.04988	0.893382	0.006881	728.3912
Los Angeles	2047	OBUS	Aggregated	65	DSL	30374.52	0.012755	0.014521	0.084742	1.278959	0.009046	957.5145
Los Angeles	2047	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2047	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2048	HHDT	Aggregated	65	DSL	809768	0.018488	0.021047	0.127975	1.628347	0.008997	952.2986
Los Angeles	2048	LDA	Aggregated	65	DSL	55317.68	0.002002	0.00228	0.066662	0.005533	0.001564	165.4052
Los Angeles	2048	LDT1	Aggregated	65	DSL	87.79894	0.007224	0.008224	0.079336	0.028489	0.002971	314.2752
Los Angeles	2048	LDT2	Aggregated	65	DSL	17798.11	0.006796	0.007736	0.070554	0.020187	0.002062	218.1615
Los Angeles	2048	LHDT1	Aggregated	65	DSL	613249.7	0.019615	0.022331	0.093329	0.03819	0.003591	379.8819
Los Angeles	2048	LHDT2	Aggregated	65	DSL	240569.8	0.020438	0.023268	0.102251	0.06972	0.003848	407.0038
Los Angeles	2048	MDV	Aggregated	65	DSL	37506.33	0.00228	0.002595	0.075454	0.006373	0.0027	285.6442

Los Angeles	2048	MH	Aggregated	65	DSL	6854.141	0.019662	0.022383	0.058994	1.410334	0.006783	717.4526
Los Angeles	2048	MHDT	Aggregated	65	DSL	435845.5	0.008078	0.009196	0.049884	0.892637	0.006864	726.5857
Los Angeles	2048	OBUS	Aggregated	65	DSL	30689.09	0.012754	0.01452	0.084737	1.276803	0.00903	955.8514
Los Angeles	2048	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2048	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2049	HHDT	Aggregated	65	DSL	817973.6	0.018484	0.021043	0.127961	1.626693	0.00898	950.4733
Los Angeles	2049	LDA	Aggregated	65	DSL	55348.31	0.001999	0.002276	0.066652	0.005502	0.001563	165.3411
Los Angeles	2049	LDT1	Aggregated	65	DSL	87.91995	0.007169	0.008161	0.078473	0.02715	0.002965	313.5957
Los Angeles	2049	LDT2	Aggregated	65	DSL	17824.94	0.006797	0.007738	0.070623	0.020183	0.002061	218.0032
Los Angeles	2049	LHDT1	Aggregated	65	DSL	614898.7	0.019559	0.022267	0.092812	0.03533	0.003586	379.3148
Los Angeles	2049	LHDT2	Aggregated	65	DSL	241352.5	0.020293	0.023102	0.100824	0.063159	0.003842	406.3899
Los Angeles	2049	MDV	Aggregated	65	DSL	37573.69	0.002271	0.002585	0.075404	0.006284	0.002697	285.3398
Los Angeles	2049	MH	Aggregated	65	DSL	6884.29	0.019584	0.022295	0.057707	1.404699	0.006767	715.7919
Los Angeles	2049	MHDT	Aggregated	65	DSL	440455.1	0.008079	0.009197	0.049892	0.892137	0.00685	725.0162
Los Angeles	2049	OBUS	Aggregated	65	DSL	31000.82	0.012748	0.014513	0.084699	1.273088	0.009014	954.1499
Los Angeles	2049	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2049	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2050	HHDT	Aggregated	65	DSL	826185.4	0.01848	0.021039	0.127945	1.625145	0.009014	954.1177
Los Angeles	2050	LDA	Aggregated	65	DSL	55372.33	0.001997	0.002273	0.066642	0.005464	0.001563	165.2907
Los Angeles	2050	LDT1	Aggregated	65	DSL	88.05704	0.007138	0.008126	0.078001	0.026364	0.00296	313.076
Los Angeles	2050	LDT2	Aggregated	65	DSL	17848.44	0.006797	0.007738	0.070661	0.020139	0.00206	217.8654
Los Angeles	2050	LHDT1	Aggregated	65	DSL	616314.1	0.019513	0.022214	0.09239	0.032927	0.003581	378.8176
Los Angeles	2050	LHDT2	Aggregated	65	DSL	241909	0.020049	0.022825	0.098368	0.052679	0.003836	405.7542
Los Angeles	2050	MDV	Aggregated	65	DSL	37632.88	0.002261	0.002574	0.075332	0.006151	0.002695	285.0854
Los Angeles	2050	MH	Aggregated	65	DSL	6912.566	0.019518	0.02222	0.05658	1.399842	0.006753	714.2818
Los Angeles	2050	MHDT	Aggregated	65	DSL	445060.4	0.008081	0.009199	0.049905	0.891851	0.006848	724.8767
Los Angeles	2050	OBUS	Aggregated	65	DSL	31315.71	0.012736	0.014499	0.084621	1.267632	0.009007	953.3878
Los Angeles	2050	SBUS	Aggregated	65	DSL	0	0	0	0	0	0	0
Los Angeles	2050	UBUS	Aggregated	65	DSL	0	0	0	0	0	0	0

3, 2044, 2045, 2046, 2047, 2048, 2049, 2050

CH4_RUNE	PM10_RUNEX	PM2_5_RU	N2O_RUNEX
0.001921	0.033315915	0.031875	0.192665
0.000508	0.007339439	0.007022	0.027964
0.006645	0.108882252	0.104172	0.060386
0.000423	0.004630898	0.004431	0.037835
0.002039	0.010876678	0.010406	0.072098
0.001999	0.012338176	0.011804	0.078527
0.000298	0.003859957	0.003693	0.049731
0.001819	0.074248617	0.071037	0.13647
0.001778	0.044244226	0.04233	0.128625
0.001796	0.03062983	0.029305	0.159325
0.002108	0.034416899	0.032928	0.14866
0.038872	0.014532653	0.013904	0.190156
0.000666	0.024090972	0.023049	0.1784
0.000434	0.006178203	0.005911	0.027226
0.006306	0.10313607	0.098674	0.059566
0.000398	0.004251617	0.004068	0.036802
0.001872	0.009991273	0.009559	0.07098
0.001844	0.011811921	0.011301	0.077319
0.000271	0.003456711	0.003307	0.048334
0.001724	0.067772089	0.06484	0.134821
0.000276	0.009453604	0.009045	0.122484

0.000394	0.014493919	0.013867	0.153969
0.002014	0.033244778	0.031807	0.146862
0.038872	0.014532653	0.013904	0.190156
0.000671	0.0246447	0.023579	0.176302
0.000359	0.004992554	0.004777	0.026483
0.005871	0.095938148	0.091788	0.058625
0.000365	0.003749172	0.003587	0.035773
0.001732	0.009255948	0.008856	0.069855
0.001715	0.011436501	0.010942	0.076104
0.000252	0.003160334	0.003024	0.046984
0.001642	0.062272351	0.059578	0.13266
0.000275	0.009601214	0.009186	0.12054
0.000401	0.014992899	0.014344	0.152717
0.001921	0.032189634	0.030797	0.144827
0.038872	0.014532653	0.013904	0.190156
0.000671	0.024850883	0.023776	0.173576
0.000313	0.004223973	0.004041	0.025744
0.005505	0.089801327	0.085917	0.05757
0.000353	0.003544318	0.003391	0.034758
0.001614	0.008634064	0.008261	0.068721
0.001608	0.011179058	0.010695	0.074885
0.000232	0.002847741	0.002725	0.045641
0.001572	0.057516871	0.055029	0.130601
0.000274	0.009714763	0.009295	0.118518
0.000398	0.014812262	0.014171	0.149224
0.001826	0.031161157	0.029813	0.142703
0.038872	0.014532653	0.013904	0.190156
0.000669	0.024857345	0.023782	0.170614
0.000268	0.003474943	0.003325	0.02511
0.004819	0.077486654	0.074135	0.05632
0.000348	0.003488535	0.003338	0.033911
0.001512	0.008096159	0.007746	0.06758
0.001516	0.010985059	0.01051	0.073657
0.000215	0.002548758	0.002438	0.044496

0.00151	0.053221887	0.05092	0.12878
0.000273	0.009786672	0.009363	0.116573
0.000396	0.014665155	0.014031	0.146055
0.001722	0.030086199	0.028785	0.140487
0.038872	0.014532653	0.013904	0.190156
0.000665	0.024809518	0.023736	0.167549
0.000227	0.002769984	0.00265	0.02456
0.003526	0.053739693	0.051415	0.054591
0.000338	0.003324329	0.003181	0.03316
0.001426	0.007626365	0.007296	0.066442
0.00144	0.010841123	0.010372	0.072431
0.000193	0.002173479	0.002079	0.043493
0.001453	0.049373657	0.047238	0.126885
0.000272	0.009823969	0.009399	0.114521
0.000393	0.014496507	0.013869	0.142892
0.001608	0.028914913	0.027664	0.138073
0.038872	0.014532653	0.013904	0.190156
0.000662	0.024694237	0.023626	0.164412
0.0002	0.002201963	0.002107	0.024085
0.003032	0.040967989	0.039196	0.053089
0.000337	0.003301478	0.003159	0.03252
0.001353	0.007214908	0.006903	0.06544
0.001375	0.010732749	0.010268	0.07135
0.00018	0.001904964	0.001823	0.042633
0.001402	0.045959595	0.043971	0.12513
0.000271	0.009878585	0.009451	0.112635
0.000393	0.014489452	0.013863	0.140326
0.001488	0.027654253	0.026458	0.135565
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0.000657	0.024502383	0.023442	0.161141
0.000174	0.00181178	0.001733	0.02368
0.002279	0.030402166	0.029087	0.051806
0.000335	0.003291433	0.003149	0.031949
0.001291	0.00685215	0.006556	0.064578

0.001321	0.010647934	0.010187	0.070411
0.000167	0.001695963	0.001623	0.041883
0.001357	0.042890511	0.041035	0.123555
0.00027	0.009924938	0.009496	0.11092
0.000393	0.014548355	0.013919	0.138194
0.001368	0.02637728	0.025236	0.13305
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0.000652	0.024290618	0.02324	0.157787
0.000152	0.001493376	0.001429	0.023324
0.001689	0.022135477	0.021178	0.050532
0.000333	0.003281599	0.00314	0.031437
0.001238	0.006534887	0.006252	0.063825
0.001275	0.010597635	0.010139	0.069585
0.000159	0.001552007	0.001485	0.041232
0.001317	0.040181074	0.038443	0.122156
0.00027	0.009955825	0.009525	0.109332
0.000394	0.014655352	0.014021	0.136456
0.00125	0.025068534	0.023984	0.130541
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0.000647	0.024031113	0.022992	0.154226
0.000143	0.001339457	0.001282	0.023024
0.001272	0.016298458	0.015593	0.049337
0.000332	0.003280753	0.003139	0.030975
0.001193	0.00625891	0.005988	0.063164
0.001235	0.010541289	0.010085	0.068856
0.000151	0.001421601	0.00136	0.040655
0.001278	0.037619875	0.035992	0.120903
0.000269	0.009976256	0.009545	0.107882
0.000395	0.01477947	0.01414	0.135084
0.001135	0.023713087	0.022687	0.12807
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0.000643	0.023853554	0.022822	0.151168
0.000131	0.001159606	0.001109	0.022753
0.00104	0.013069852	0.012504	0.048265

0.000333	0.003292413	0.00315	0.03056
0.001156	0.006023439	0.005763	0.06258
0.0012	0.010484423	0.010031	0.068208
0.000145	0.001321201	0.001264	0.040145
0.001246	0.035362049	0.033832	0.119786
0.000268	0.009994193	0.009562	0.106617
0.000396	0.014819102	0.014178	0.133754
0.001025	0.022316004	0.021351	0.125687
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0.000639	0.023690628	0.022666	0.148299
0.000126	0.001063776	0.001018	0.022522
0.000925	0.011488182	0.010991	0.047338
0.000333	0.003301113	0.003158	0.030186
0.001124	0.005815586	0.005564	0.062061
0.00117	0.010432237	0.009981	0.06763
0.000141	0.001233699	0.00118	0.039693
0.001215	0.033218639	0.031782	0.118777
0.000268	0.010012507	0.009579	0.105495
0.000395	0.014817629	0.014177	0.132498
0.00092	0.020863585	0.019961	0.123387
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0.000635	0.023507343	0.02249	0.145565
0.000121	0.000977889	0.000936	0.022319
0.000828	0.01014491	0.009706	0.046498
0.000333	0.003310054	0.003167	0.029852
0.001099	0.005632127	0.005388	0.061599
0.001145	0.010358795	0.009911	0.067115
0.000137	0.001156042	0.001106	0.039292
0.001185	0.031192491	0.029843	0.117865
0.000267	0.010013933	0.009581	0.104449
0.000394	0.014742317	0.014105	0.131252
0.00082	0.019327507	0.018491	0.121175
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0.000632	0.023339959	0.02233	0.143051

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0.000671	0.00797101	0.007626	0.045697
0.000333	0.003321472	0.003178	0.029559
0.001076	0.005462649	0.005226	0.061183
0.001121	0.010275077	0.009831	0.066647
0.000133	0.001081215	0.001034	0.038935
0.001159	0.029329929	0.028061	0.117045
0.000266	0.010001093	0.009568	0.103506
0.000393	0.014640078	0.014007	0.130048
0.000728	0.017754764	0.016987	0.119077
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0.001136	0.0276335	0.026438	0.116304
0.000266	0.009986349	0.009554	0.10273
0.000391	0.014530196	0.013902	0.128942
0.000646	0.016262565	0.015559	0.117127
0	0	0	0
0.000628	0.023123776	0.022123	0.138896
0.00011	0.0007783	0.000745	0.02186
0.000555	0.006375879	0.0061	0.044419
0.000334	0.003338757	0.003194	0.029088
0.00104	0.005173449	0.00495	0.060467
0.001087	0.010337727	0.009891	0.065863
0.000127	0.000956883	0.000915	0.038342
0.001114	0.026012302	0.024887	0.115627
0.000265	0.009970764	0.009539	0.101936
0.00039	0.014429601	0.013805	0.127935
0.000574	0.014900508	0.014256	0.115311

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0.000525	0.005980844	0.005722	0.043847
0.000334	0.003345833	0.003201	0.028904
0.001026	0.005046905	0.004829	0.060158
0.001073	0.01036281	0.009915	0.065521
0.000124	0.000906435	0.000867	0.038099
0.001093	0.02449897	0.023439	0.115009
0.000265	0.009955083	0.009524	0.101221
0.000388	0.014360305	0.013739	0.127056
0.000512	0.013720468	0.013127	0.113623
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0.000626	0.023021725	0.022026	0.135705
0.000106	0.00069346	0.000663	0.021658
0.000501	0.005662334	0.005417	0.043366
0.000334	0.003351763	0.003207	0.028749
0.001013	0.00493178	0.004718	0.059879
0.001059	0.010380101	0.009931	0.065206
0.000122	0.000862087	0.000825	0.037886
0.001074	0.023121063	0.022121	0.114447
0.000265	0.009937545	0.009508	0.100577
0.000387	0.014296803	0.013678	0.126275
0.000459	0.012743842	0.012193	0.112036
0	0	0	0
0.000625	0.023004505	0.022009	0.13448
0.000104	0.000660592	0.000632	0.021581
0.00048	0.005380435	0.005148	0.042944
0.000334	0.003357234	0.003212	0.028622
0.001003	0.004827916	0.004619	0.059627
0.001049	0.010406549	0.009956	0.064933
0.00012	0.000822293	0.000787	0.0377
0.001057	0.021835187	0.020891	0.113926
0.000264	0.009921987	0.009493	0.100002

0.000387	0.014268074	0.013651	0.125616
0.000412	0.01196443	0.011447	0.110516
0	0	0	0
0.000625	0.022997785	0.022003	0.13346
0.000103	0.000634834	0.000607	0.021519
0.00045	0.004980348	0.004765	0.04245
0.000334	0.003362115	0.003217	0.028519
0.000995	0.004736827	0.004532	0.0594
0.001041	0.010433048	0.009982	0.064686
0.000118	0.000787667	0.000754	0.03754
0.001041	0.020605619	0.019714	0.113447
0.000264	0.009907857	0.009479	0.09947
0.000387	0.014284359	0.013666	0.125079
0.000373	0.011359839	0.010868	0.109079
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0.000625	0.023003587	0.022008	0.132634
0.000101	0.000614591	0.000588	0.02147
0.000429	0.004701148	0.004498	0.042071
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0.000987	0.004653137	0.004452	0.059194
0.001034	0.010459742	0.010007	0.064468
0.000117	0.000757488	0.000725	0.037402
0.001027	0.019448734	0.018607	0.113006
0.000264	0.009899225	0.009471	0.098998
0.000387	0.014329909	0.01371	0.12465
0.00034	0.010866162	0.010396	0.107693
0	0	0	0
0.000625	0.023012807	0.022017	0.131946
0.000101	0.000598628	0.000573	0.02143
0.000409	0.004435418	0.004244	0.04172
0.000335	0.003370333	0.003225	0.028369
0.000982	0.00458362	0.004385	0.059012
0.00103	0.010489448	0.010036	0.064282
0.000116	0.000732123	0.0007	0.037285

0.001014	0.018345806	0.017552	0.112592
0.000263	0.009892873	0.009465	0.098566
0.000388	0.014397917	0.013775	0.124309
0.000312	0.010464117	0.010011	0.106383
0	0	0	0
0.000624	0.023023264	0.022027	0.131372
0.0001	0.000586298	0.000561	0.0214
0.000396	0.004260307	0.004076	0.041452
0.000335	0.003374016	0.003228	0.028315
0.000977	0.004519722	0.004324	0.058849
0.001021	0.010501932	0.010048	0.064101
0.000115	0.000710787	0.00068	0.037187
0.001002	0.017304161	0.016556	0.112209
0.000263	0.009890641	0.009463	0.098181
0.000389	0.014459017	0.013834	0.12402
0.000291	0.010149482	0.00971	0.105189
0	0	0	0
0.000624	0.023033	0.022037	0.130882
9.95E-05	0.000576909	0.000552	0.021376
0.000387	0.004142084	0.003963	0.041246
0.000335	0.003377433	0.003231	0.028272
0.000973	0.004468643	0.004275	0.058707
0.001013	0.010516899	0.010062	0.063948
0.000114	0.000693198	0.000663	0.037103
0.000991	0.016337209	0.01563	0.111848
0.000263	0.00989268	0.009465	0.097842
0.000389	0.01450715	0.01388	0.123776
0.000277	0.009934167	0.009504	0.104143
0	0	0	0
0.000624	0.023038476	0.022042	0.130467
9.92E-05	0.000569847	0.000545	0.021357
0.00038	0.004042541	0.003868	0.041067
0.000335	0.003380622	0.003234	0.028238
0.000969	0.004424752	0.004233	0.05858

0.001005	0.010527307	0.010072	0.063809
0.000113	0.000678522	0.000649	0.037034
0.000982	0.015505288	0.014835	0.111521
0.000263	0.009894645	0.009467	0.097535
0.000389	0.01453883	0.01391	0.123546
0.000268	0.009810208	0.009386	0.10325
0	0	0	0
0.000624	0.023041921	0.022045	0.130102
9.89E-05	0.000564071	0.00054	0.021343
0.00036	0.003771092	0.003608	0.040763
0.000335	0.003383562	0.003237	0.028209
0.000967	0.004388875	0.004199	0.05847
0.001	0.010541569	0.010086	0.063693
0.000113	0.000666862	0.000638	0.036976
0.000975	0.014807992	0.014167	0.111223
0.000263	0.009896644	0.009469	0.097256
0.00039	0.014564182	0.013934	0.123341
0.000264	0.009759606	0.009337	0.102503
0	0	0	0
0.000624	0.023044083	0.022047	0.12978
9.87E-05	0.000559522	0.000535	0.021332
0.000352	0.003664679	0.003506	0.040602
0.000335	0.00338623	0.00324	0.028185
0.000964	0.004354978	0.004167	0.05837
0.000994	0.010548204	0.010092	0.063585
0.000112	0.000656724	0.000628	0.036929
0.00097	0.014081113	0.013472	0.110947
0.000263	0.009899588	0.009471	0.097012
0.00039	0.014561961	0.013932	0.123112
0.000262	0.009762747	0.00934	0.101879
0	0	0	0
0.000624	0.023050197	0.022053	0.129524
9.86E-05	0.000556319	0.000532	0.021324
0.00035	0.00364026	0.003483	0.040514

0.000335	0.003388821	0.003242	0.028164
0.000963	0.00432434	0.004137	0.058283
0.000989	0.010552351	0.010096	0.063489
0.000112	0.000647957	0.00062	0.03689
0.000966	0.013398404	0.012819	0.11069
0.000263	0.009904496	0.009476	0.096799
0.000389	0.014543774	0.013915	0.122869
0.000262	0.009799608	0.009376	0.101352
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0.000624	0.023060362	0.022063	0.129745
9.84E-05	0.000553572	0.00053	0.021318
0.000349	0.003627188	0.00347	0.040447
0.000335	0.003390447	0.003244	0.028147
0.000961	0.004297015	0.004111	0.058207
0.000981	0.01053989	0.010084	0.06339
0.000111	0.000639557	0.000612	0.036857
0.000963	0.012799549	0.012246	0.110456
0.000263	0.009910934	0.009482	0.096778
0.000389	0.014505281	0.013878	0.122717
0.000262	0.009854296	0.009428	0.100999
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0.001753	0.042457803	0.040621	0.211687
0.000578	0.008598573	0.008227	0.034082
0.008322	0.136618397	0.130708	0.073471
0.000433	0.005007259	0.004791	0.046034
0.002333	0.012323481	0.01179	0.073755
0.002279	0.013802944	0.013206	0.079009
0.00031	0.00417747	0.003997	0.060465
0.002091	0.098079756	0.093837	0.138717
0.001851	0.05125135	0.049034	0.147692
0.002068	0.03982026	0.038098	0.18945
0	0	0	0
0.03467	0.02121016	0.020293	0.20784
0.000925	0.035263691	0.033738	0.204778

0.000489	0.007185459	0.006875	0.033182
0.007893	0.129357974	0.123762	0.072472
0.000401	0.00451363	0.004318	0.044776
0.002114	0.011195351	0.010711	0.072612
0.002076	0.013030618	0.012467	0.077793
0.00028	0.003719594	0.003559	0.058766
0.001963	0.089195688	0.085337	0.137041
0.000384	0.014407874	0.013785	0.143997
0.000591	0.02328754	0.02228	0.186552
0	0	0	0
0.03467	0.02121016	0.020293	0.20784
0.000925	0.035573812	0.034035	0.20111
0.000397	0.005733116	0.005485	0.032277
0.007342	0.120269539	0.115067	0.071328
0.000359	0.003865908	0.003699	0.043525
0.001931	0.010257589	0.009814	0.071461
0.001907	0.012453283	0.011915	0.076571
0.000258	0.003388223	0.003242	0.057125
0.001852	0.081661811	0.078129	0.134844
0.000385	0.014663733	0.014029	0.141736
0.000605	0.024208976	0.023162	0.185604
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0.03467	0.02121016	0.020293	0.20784
0.000922	0.035570286	0.034032	0.197011
0.000341	0.004801987	0.004594	0.031376
0.006877	0.112514705	0.107647	0.070045
0.000342	0.003593716	0.003438	0.042289
0.001775	0.009465139	0.009056	0.070301
0.001766	0.012030735	0.01151	0.075344
0.000237	0.003032014	0.002901	0.055492
0.001758	0.075125915	0.071876	0.132751
0.000385	0.01486505	0.014222	0.139382
0.000601	0.023914912	0.02288	0.181346
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0.03467	0.02121016	0.020293	0.20784
0.000916	0.035384301	0.033854	0.1928
0.000287	0.003892873	0.003724	0.030603
0.006008	0.096973967	0.092779	0.068523
0.000336	0.003510399	0.003359	0.041259
0.001642	0.008781328	0.008401	0.069134
0.001645	0.011694346	0.011188	0.074109
0.000216	0.002689477	0.002573	0.054099
0.001673	0.069226344	0.066232	0.130901
0.000384	0.015000115	0.014351	0.137116
0.000597	0.023675965	0.022652	0.177485
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0.03467	0.02121016	0.020293	0.20784
0.000909	0.03511452	0.033595	0.188263
0.000237	0.003037435	0.002906	0.029933
0.004372	0.067022885	0.064124	0.06642
0.000323	0.003291582	0.003149	0.040345
0.001528	0.008186355	0.007832	0.067969
0.001544	0.011427142	0.010933	0.072876
0.000191	0.002248213	0.002151	0.05288
0.001595	0.063943846	0.061178	0.128974
0.000383	0.015078321	0.014426	0.13472
0.000593	0.02339941	0.022387	0.173628
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0.000903	0.034845985	0.033339	0.183812
0.000206	0.002353336	0.002252	0.029354
0.003744	0.050897895	0.048696	0.064592
0.000321	0.003252165	0.003111	0.039567
0.001431	0.007667901	0.007336	0.066945
0.001458	0.011211216	0.010726	0.071787
0.000177	0.001939393	0.001855	0.051835
0.001526	0.059237922	0.056675	0.127191
0.000383	0.015179994	0.014523	0.132518

0.000592	0.023372607	0.022362	0.170476
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0.000897	0.034562539	0.033067	0.1797
0.000174	0.0018915	0.00181	0.02886
0.00279	0.037546922	0.035923	0.063032
0.000318	0.003230127	0.00309	0.038871
0.001349	0.007213375	0.006901	0.066062
0.001386	0.011031293	0.010554	0.070843
0.000162	0.001703783	0.00163	0.050923
0.001463	0.054991087	0.052612	0.12559
0.000382	0.015266794	0.014606	0.130514
0.000592	0.023448243	0.022434	0.167845
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0.000891	0.034330179	0.032845	0.175895
0.000149	0.001518794	0.001453	0.028426
0.002042	0.027096608	0.025924	0.061482
0.000315	0.003209427	0.003071	0.038248
0.001279	0.006818138	0.006523	0.065292
0.001325	0.010901241	0.01043	0.070012
0.000153	0.001548898	0.001482	0.050131
0.001406	0.051217269	0.049002	0.124167
0.000382	0.015327829	0.014665	0.128658
0.000594	0.023600219	0.022579	0.165697
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0.000886	0.034137263	0.03266	0.172422
0.000139	0.001351478	0.001293	0.028061
0.001513	0.01971292	0.01886	0.060027
0.000314	0.003201194	0.003063	0.037686
0.001219	0.006476648	0.006196	0.064616
0.001273	0.010769039	0.010303	0.069279
0.000144	0.00140892	0.001348	0.04943

0.001352	0.047666127	0.045604	0.122894
0.000381	0.015371211	0.014706	0.126962
0.000604	0.024047538	0.023007	0.165415
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0.000881	0.033949951	0.032481	0.169307
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0.001218	0.015621612	0.014946	0.058723
0.000314	0.003209722	0.003071	0.037182
0.00117	0.006187956	0.00592	0.064019
0.001226	0.010641242	0.010181	0.068626
0.000139	0.001305266	0.001249	0.04881
0.001306	0.044491379	0.042567	0.121758
0.000381	0.015408632	0.014742	0.125483
0.000605	0.024093507	0.023051	0.163754
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0.000877	0.033784864	0.032323	0.166576
0.00012	0.001052088	0.001007	0.027449
0.001072	0.013610606	0.013022	0.057595
0.000314	0.003215453	0.003076	0.036727
0.001128	0.005935165	0.005678	0.063488
0.001186	0.010524483	0.010069	0.068045
0.000134	0.001216166	0.001164	0.048259
0.001261	0.041485285	0.039691	0.120732
0.00038	0.015444735	0.014777	0.124171
0.000604	0.024069391	0.023028	0.162173
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0.000873	0.033599383	0.032146	0.164109
0.000115	0.000964832	0.000923	0.027202
0.000947	0.011901718	0.011387	0.056574
0.000314	0.003222307	0.003083	0.03632
0.001093	0.005714438	0.005467	0.063015

0.001151	0.010385488	0.009936	0.067527
0.00013	0.001138053	0.001089	0.047772
0.001219	0.03865434	0.036982	0.119805
0.00038	0.015453529	0.014785	0.122947
0.000602	0.023926382	0.022891	0.160604
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0.000748	0.009145643	0.00875	0.055598
0.000314	0.003232949	0.003093	0.035964
0.001063	0.005511748	0.005273	0.062589
0.00112	0.010237325	0.009794	0.067056
0.000126	0.001062041	0.001016	0.047338
0.001181	0.036044833	0.034486	0.118972
0.000379	0.015439796	0.014772	0.121844
0.000599	0.023744864	0.022718	0.159094
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0.000867	0.033302858	0.031862	0.160062
0.000107	0.000819928	0.000784	0.026801
0.000646	0.007745515	0.00741	0.054756
0.000314	0.003240824	0.003101	0.035656
0.001037	0.005336251	0.005105	0.062206
0.001096	0.010243136	0.0098	0.066644
0.000123	0.00099726	0.000954	0.046955
0.001147	0.033628075	0.032173	0.118219
0.000378	0.015421066	0.014754	0.120855
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0.000865	0.033202945	0.031767	0.158397
0.000104	0.000763198	0.00073	0.026642
0.000599	0.007111245	0.006804	0.054044

0.000314	0.003248766	0.003108	0.035391
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0.001074	0.010245028	0.009802	0.066267
0.00012	0.000937419	0.000897	0.046618
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0.000378	0.015400193	0.014734	0.119932
0.000594	0.023373538	0.022362	0.156438
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0.000864	0.033131907	0.031699	0.156932
0.000102	0.000717269	0.000686	0.026508
0.000561	0.006602376	0.006317	0.053348
0.000315	0.003255353	0.003115	0.035167
0.000995	0.005024761	0.004807	0.061541
0.001055	0.010246874	0.009804	0.065923
0.000117	0.000887473	0.000849	0.046322
0.001083	0.0291539	0.027893	0.116902
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0.000592	0.023238494	0.022233	0.155315
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0.000863	0.033087879	0.031657	0.155652
9.99E-05	0.000679061	0.00065	0.026396
0.00053	0.006191623	0.005924	0.052763
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0.000978	0.004892551	0.004681	0.061256
0.001036	0.010241776	0.009799	0.065606
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0.000377	0.015354008	0.01469	0.118353
0.00059	0.023108735	0.022109	0.154305
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0.000862	0.033065106	0.031635	0.154532

9.82E-05	0.000646115	0.000618	0.026303
0.000502	0.005827858	0.005576	0.052249
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0.000964	0.004774221	0.004568	0.060997
0.001023	0.010252247	0.009809	0.065331
0.000113	0.000803875	0.000769	0.045837
0.001031	0.025382515	0.024284	0.115802
0.000376	0.015332091	0.014669	0.117685
0.000589	0.023036548	0.02204	0.153448
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0.000861	0.033056538	0.031627	0.153568
9.68E-05	0.000620433	0.000594	0.026227
0.000464	0.005312863	0.005083	0.051649
0.000315	0.003270548	0.003129	0.034699
0.000953	0.004671783	0.00447	0.060765
0.001011	0.01026607	0.009822	0.065083
0.000112	0.000769567	0.000736	0.045642
0.001009	0.023650573	0.022627	0.115315
0.000376	0.015312072	0.01465	0.117066
0.000589	0.023039397	0.022043	0.152742
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0.000861	0.033058457	0.031628	0.152743
9.58E-05	0.000600249	0.000574	0.026167
0.000436	0.004952953	0.004739	0.051186
0.000315	0.003274498	0.003133	0.034597
0.000943	0.004578068	0.00438	0.060554
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0.000989	0.022025555	0.021073	0.114867
0.000376	0.015300398	0.014639	0.116518
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0.000997	0.01030496	0.009859	0.064676
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0.000971	0.020479964	0.019594	0.114446
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0.000929	0.004430251	0.004239	0.060202
0.000985	0.010305834	0.00986	0.064495
0.000108	0.000693746	0.000664	0.045213
0.000955	0.019025716	0.018203	0.114056
0.000375	0.015289961	0.014629	0.115567
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0	0	0	0
0	0	0	0
0.00086	0.033075563	0.031645	0.150855
9.39E-05	0.000562379	0.000538	0.026052
0.000382	0.004231399	0.004048	0.050184
0.000315	0.003284998	0.003143	0.034398
0.000923	0.004373549	0.004184	0.060057
0.000975	0.010311165	0.009865	0.06434
0.000107	0.000676518	0.000647	0.045111
0.000939	0.017671572	0.016907	0.113689
0.000375	0.015294357	0.014633	0.115173

0.000592	0.023347394	0.022337	0.151042
0	0	0	0
0	0	0	0
0.000859	0.033079028	0.031648	0.150409
9.35E-05	0.000555255	0.000531	0.02603
0.000372	0.004102486	0.003925	0.049966
0.000315	0.003288025	0.003146	0.034356
0.000918	0.004324545	0.004137	0.059927
0.000964	0.010311165	0.009865	0.064201
0.000107	0.00066204	0.000633	0.045027
0.000927	0.016512123	0.015798	0.113357
0.000375	0.015298481	0.014637	0.114816
0.000592	0.023393537	0.022382	0.150757
0	0	0	0
0	0	0	0
0.000859	0.03308069	0.03165	0.150023
9.32E-05	0.000549317	0.000526	0.026013
0.000346	0.003753372	0.003591	0.049595
0.000316	0.003290815	0.003148	0.034321
0.000915	0.004284924	0.0041	0.059814
0.000957	0.010317356	0.009871	0.064084
0.000106	0.000650566	0.000622	0.044957
0.000918	0.015538225	0.014866	0.113055
0.000375	0.015302521	0.014641	0.114493
0.000592	0.023433387	0.02242	0.150508
0	0	0	0
0	0	0	0
0.000859	0.033079992	0.031649	0.149688
9.3E-05	0.000544603	0.000521	0.025999
0.000336	0.003615849	0.003459	0.0494
0.000316	0.003293323	0.003151	0.034292
0.000911	0.004247439	0.004064	0.059712
0.000949	0.010314483	0.009868	0.063975
0.000106	0.00064045	0.000613	0.044899

0.000913	0.014549967	0.013921	0.112774
0.000375	0.015307996	0.014646	0.114209
0.000592	0.023435718	0.022422	0.150247
0	0	0	0
0	0	0	0
0.000859	0.033078736	0.031648	0.149401
9.29E-05	0.000541343	0.000518	0.025989
0.000333	0.003583542	0.003429	0.049293
0.000316	0.00329579	0.003153	0.034267
0.000908	0.004213693	0.004031	0.059623
0.000943	0.010309111	0.009863	0.063879
0.000105	0.000631513	0.000604	0.044851
0.00091	0.013623552	0.013034	0.112513
0.000375	0.015316192	0.014654	0.113962
0.000592	0.023415626	0.022403	0.149979
0	0	0	0
0	0	0	0
0.000858	0.033077133	0.031646	0.149974
9.27E-05	0.000538477	0.000515	0.025981
0.000332	0.003565787	0.003412	0.049211
0.000316	0.003297066	0.003154	0.034245
0.000906	0.004183811	0.004003	0.059545
0.000931	0.010281849	0.009837	0.063779
0.000105	0.000622622	0.000596	0.044811
0.000907	0.012810121	0.012256	0.112275
0.000375	0.015326716	0.014664	0.113941
0.000592	0.023368446	0.022358	0.149859
0	0	0	0
0	0	0	0

Arroyo Specific Plan
EMFAC2017 WebDataBase Output file
Los Angeles South Coast Vehicle Population Data

EMFAC2017 (v1.0.2) Emission Rates
Region Type: Sub-Area
Region: Los Angeles (SC)
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	ROG_RUNE	ROG_IDLEX	ROG_STRE	ROG_HOTS
Los Angeles	2022	HHDT	Aggregatec	Aggregatec	DSL	56923.27	6812046	566695.2	0.077671	4.606194	0	0
Los Angeles	2022	LDA	Aggregatec	Aggregatec	DSL	34750.74	1365564	164528.3	0.021286	0	0	0
Los Angeles	2022	LDT1	Aggregatec	Aggregatec	DSL	270.6503	6627.201	961.471	0.191727	0	0	0
Los Angeles	2022	LDT2	Aggregatec	Aggregatec	DSL	8920.377	378460.6	44003.2	0.023132	0	0	0
Los Angeles	2022	LHDT1	Aggregatec	Aggregatec	DSL	64097.23	2744971	806262.5	0.065313	0.10976	0	0
Los Angeles	2022	LHDT2	Aggregatec	Aggregatec	DSL	25927.31	1067421	326132.9	0.064442	0.10976	0	0
Los Angeles	2022	MDV	Aggregatec	Aggregatec	DSL	19516.67	771652.4	96044.42	0.015776	0	0	0
Los Angeles	2022	MH	Aggregatec	Aggregatec	DSL	5865.305	61785.31	586.5305	0.06719	0	0	0
Los Angeles	2022	MHDT	Aggregatec	Aggregatec	DSL	64993.29	4140797	639139.1	0.061871	0.093974	0	0
Los Angeles	2022	OBUS	Aggregatec	Aggregatec	DSL	3063.907	235354.5	29929.83	0.061934	1.031986	0	0
Los Angeles	2022	SBUS	Aggregatec	Aggregatec	DSL	3460.157	109535.7	39929.73	0.112169	0.286858	0	0
Los Angeles	2022	UBUS	Aggregatec	Aggregatec	DSL	10.1389	1181.23	40.5556	0.001159	0	0	0

and DIURN

ROG_RUNL	ROG_RESTI	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_RESTI	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX
0	0	0	0.088422	5.243801	0	0	0	0	0	0.355332	62.30323	0
0	0	0	0.024233	0	0	0	0	0	0	0.294415	0	0
0	0	0	0.218268	0	0	0	0	0	0	1.12312	0	0
0	0	0	0.026334	0	0	0	0	0	0	0.191116	0	0
0	0	0	0.074355	0.124954	0	0	0	0	0	0.33048	0.909745	0
0	0	0	0.073363	0.124954	0	0	0	0	0	0.324112	0.909745	0
0	0	0	0.01796	0	0	0	0	0	0	0.277361	0	0
0	0	0	0.076492	0	0	0	0	0	0	0.269043	0	0
0	0	0	0.070435	0.106983	0	0	0	0	0	0.24236	2.434588	0
0	0	0	0.070508	1.174837	0	0	0	0	0	0.262003	13.78649	0
0	0	0	0.127696	0.326566	0	0	0	0	0	0.325319	6.568771	0
0	0	0	0.082805	0	0	0	0	0	0	0.138037	0	0

NOx_RUNE	NOx_IDLEX	NOx_STREX	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PMT
3.60506	63.08184	2.103887	1451.961	11718.19	0	0.003608	0.213946	0	0.02856	0.037879	0	0.035596
0.077574	0	0	215.2423	0	0	0.000989	0	0	0.009891	0	0	0.008
1.043121	0	0	467.3854	0	0	0.008905	0	0	0.143295	0	0	0.008
0.048336	0	0	292.8436	0	0	0.001074	0	0	0.006399	0	0	0.008
1.215693	1.882319	0	464.7443	130.5222	0	0.003034	0.005098	0	0.013152	0.027795	0	0.012
1.165018	1.90161	0	514.181	209.9226	0	0.002993	0.005098	0	0.014926	0.028376	0	0.012
0.04687	0	0	378.6242	0	0	0.000733	0	0	0.005332	0	0	0.008
3.432833	0	0	965.3296	0	0	0.003121	0	0	0.074965	0	0	0.016
1.858006	6.770241	1.707577	954.2618	841.0778	0	0.002874	0.004365	0	0.037714	0.015346	0	0.012
2.33374	16.23003	1.895212	1178.738	2873.598	0	0.002877	0.047933	0	0.029155	0.028183	0	0.012
6.80758	40.91345	0.944657	1219.865	3626.861	0	0.00521	0.013324	0	0.04025	0.051926	0	0.012
0.832392	0	0	1797.118	0	0	0.081135	0	0	0.006137	0	0	0.036

PM10_PMI	PM2_5_RU	PM2_5_IDI	PM2_5_ST	PM2_5_PM	PM2_5_PM	SOx_RUNE	SOx_IDLEX	SOx_STREX	N2O_RUNE	N2O_IDLEX	N2O_STREX
0.061047	0.027324	0.03624	0	0.008899	0.026163	0.013717	0.110708	0	0.228228	1.841936	0
0.03675	0.009463	0	0	0.002	0.01575	0.002035	0	0	0.033833	0	0
0.03675	0.137096	0	0	0.002	0.01575	0.004418	0	0	0.073466	0	0
0.03675	0.006122	0	0	0.002	0.01575	0.002768	0	0	0.046031	0	0
0.07644	0.012583	0.026592	0	0.003	0.03276	0.004394	0.001234	0	0.073051	0.020516	0
0.08918	0.01428	0.027148	0	0.003	0.03822	0.004861	0.001985	0	0.080822	0.032997	0
0.03675	0.005102	0	0	0.002	0.01575	0.003579	0	0	0.059514	0	0
0.13034	0.071722	0	0	0.004	0.05586	0.009126	0	0	0.151736	0	0
0.13034	0.036083	0.014682	0	0.003	0.05586	0.009015	0.007946	0	0.149997	0.132206	0
0.13034	0.027894	0.026964	0	0.003	0.05586	0.011136	0.027148	0	0.185281	0.45169	0
0.7448	0.038509	0.049679	0	0.003	0.3192	0.011525	0.034265	0	0.191746	0.570092	0
0.06174	0.005872	0	0	0.009	0.02646	0.016989	0	0	0.282482	0	0

APPENDIX B: HARP2 OUTPUTS

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Arroyo Specific Plan
HARP2 Output (Cancer)

*HARP - HRACalc v19044 2/27/2019 1:32:19 PM - Cancer Risk
Input File: C:\Users\pgleason\Desktop\Arroyo_Ground_Afternoon\Arroyo_Ground_CancerHRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK
1			9901	DieselExhP	0.04136	2.82E-05	30YrCancer	*	2.82E-05

Arroyo Specific Plan
HARP2 Output (Chronic Risk; Non-Cancer)

*HARP - HRACalc v19044 2/27/2019 1:33:23 PM - Chronic Risk
Input File:('C'):\Users\pgleason\Desktop\Arroyo_Ground_Afternoon\Arroyo_Ground_Non-CancerHRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBREV	CONC	SCENARIO	RESP
1			9901	DieselExhPM	0.04136	NonCancerChronicHighEnd	8.27E-03

APPENDIX C: AERMOD REPORT SUMMARY

Control Pathway

AERMOD

Dispersion Options

Titles

C:\Lakes\Monrovia_Arroyo_20190226\Monrovia_Arroyo_20190226.isc

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM10

Averaging Time Options

Hours

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

Exponential Decay

Half-life of 4 hrs will be used

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☐ Yes ☑ No

Default Height = 0.00 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: Monrovia_Arroyo_20190226.err

Source Pathway - Source Inputs

Polygon Area Sources

Source Type: AREA POLY

Source: PAREA1 (I-210 Freeway)

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
134.65	3.28	2.23E-8		12	406923.38	3777744.10
		2.23E-8			406923.15	3777692.99
		2.23E-8			407044.35	3777651.56
		2.23E-8			407100.89	3777632.81
		2.23E-8			407157.16	3777619.02
		2.23E-8			407179.22	3777614.61
		2.23E-8			407242.93	3777610.19
		2.23E-8			407904.75	3777603.57
		2.23E-8			407902.46	3777650.91
		2.23E-8			407248.69	3777655.40
		2.23E-8			407196.03	3777659.79
		2.23E-8			407159.41	3777665.35

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	407531.47	3777567.04	FENCEGRD	137.75	
2	407531.52	3777562.12	FENCEGRD	137.75	
3	407531.57	3777557.21	FENCEGRD	137.66	
4	407531.61	3777552.29	FENCEGRD	137.56	
5	407531.66	3777547.38	FENCEGRD	137.39	
6	407531.71	3777542.47	FENCEGRD	137.23	
7	407531.76	3777537.55	FENCEGRD	137.12	
8	407531.80	3777532.64	FENCEGRD	137.02	
9	407531.85	3777527.72	FENCEGRD	136.88	
10	407531.90	3777522.81	FENCEGRD	136.74	
11	407531.95	3777517.89	FENCEGRD	136.61	
12	407531.99	3777512.98	FENCEGRD	136.48	
13	407532.04	3777508.06	FENCEGRD	136.34	
14	407532.09	3777503.15	FENCEGRD	136.20	
15	407534.98	3777570.60	FENCEGRD	137.69	
16	407529.95	3777575.55	FENCEGRD	137.79	
17	407536.52	3777562.17	FENCEGRD	137.54	
18	407536.56	3777557.26	FENCEGRD	137.43	
19	407536.61	3777552.34	FENCEGRD	137.32	
20	407536.66	3777547.43	FENCEGRD	137.19	
21	407536.71	3777542.51	FENCEGRD	137.07	
22	407536.76	3777537.60	FENCEGRD	136.95	
23	407536.80	3777532.68	FENCEGRD	136.84	
24	407536.85	3777527.77	FENCEGRD	136.74	
25	407536.90	3777522.86	FENCEGRD	136.65	
26	407536.95	3777517.94	FENCEGRD	136.53	
27	407536.99	3777513.03	FENCEGRD	136.41	
28	407537.04	3777508.11	FENCEGRD	136.28	
29	407537.09	3777503.20	FENCEGRD	136.15	
30	407539.98	3777570.65	FENCEGRD	137.70	

31	407533.45	3777579.12	FENCEGRD	137.98
32	407541.52	3777562.22	FENCEGRD	137.59
33	407541.56	3777557.31	FENCEGRD	137.49
34	407541.61	3777552.39	FENCEGRD	137.38
35	407541.66	3777547.48	FENCEGRD	137.27
36	407541.71	3777542.56	FENCEGRD	137.16
37	407541.76	3777537.65	FENCEGRD	137.04
38	407541.80	3777532.73	FENCEGRD	136.92
39	407541.85	3777527.82	FENCEGRD	136.81
40	407541.90	3777522.90	FENCEGRD	136.71
41	407541.95	3777517.99	FENCEGRD	136.59
42	407541.99	3777513.07	FENCEGRD	136.47
43	407542.04	3777508.16	FENCEGRD	136.35
44	407542.09	3777503.25	FENCEGRD	136.23
45	407544.98	3777570.70	FENCEGRD	137.74
46	407541.99	3777577.73	FENCEGRD	137.95
47	407536.96	3777582.68	FENCEGRD	138.14
48	407529.88	3777585.55	FENCEGRD	138.75
49	407546.52	3777562.27	FENCEGRD	137.69
50	407546.56	3777557.35	FENCEGRD	137.59
51	407546.61	3777552.44	FENCEGRD	137.50
52	407546.66	3777547.53	FENCEGRD	137.39
53	407546.71	3777542.61	FENCEGRD	137.28
54	407546.76	3777537.70	FENCEGRD	137.15
55	407546.80	3777532.78	FENCEGRD	137.01
56	407546.85	3777527.87	FENCEGRD	136.91
57	407546.90	3777522.95	FENCEGRD	136.80
58	407546.95	3777518.04	FENCEGRD	136.68
59	407546.99	3777513.12	FENCEGRD	136.56
60	407547.04	3777508.21	FENCEGRD	136.42
61	407547.09	3777503.29	FENCEGRD	136.27
62	407549.60	3777571.63	FENCEGRD	137.79
63	407547.74	3777576.02	FENCEGRD	137.90
64	407545.87	3777580.41	FENCEGRD	138.10
65	407539.58	3777586.60	FENCEGRD	138.99
66	407535.16	3777588.40	FENCEGRD	139.55
67	407530.74	3777590.19	FENCEGRD	140.17
68	407551.47	3777567.23	FENCEGRD	137.84

69	407551.52	3777562.32	FENCEGRD	137.85
70	407551.56	3777557.40	FENCEGRD	137.78
71	407551.61	3777552.49	FENCEGRD	137.70
72	407551.66	3777547.57	FENCEGRD	137.58
73	407551.71	3777542.66	FENCEGRD	137.45
74	407551.75	3777537.74	FENCEGRD	137.29
75	407551.80	3777532.83	FENCEGRD	137.13
76	407551.85	3777527.92	FENCEGRD	137.03
77	407551.90	3777523.00	FENCEGRD	136.93
78	407551.95	3777518.09	FENCEGRD	136.80
79	407551.99	3777513.17	FENCEGRD	136.67
80	407552.04	3777508.26	FENCEGRD	136.49
81	407552.09	3777503.34	FENCEGRD	136.30
82	407649.60	3777572.60	FENCEGRD	138.35
83	407647.73	3777576.99	FENCEGRD	138.34
84	407645.87	3777581.38	FENCEGRD	138.34
85	407644.00	3777585.78	FENCEGRD	138.53
86	407642.14	3777590.17	FENCEGRD	138.78
87	407640.27	3777594.57	FENCEGRD	139.67
88	407638.40	3777598.96	FENCEGRD	141.88
89	407636.54	3777603.35	FENCEGRD	144.11
90	407634.67	3777607.75	FENCEGRD	144.99
91	407632.81	3777612.14	FENCEGRD	145.81
92	407630.94	3777616.54	FENCEGRD	146.13
93	407629.07	3777620.93	FENCEGRD	146.17
94	407627.21	3777625.32	FENCEGRD	146.18
95	407625.34	3777629.72	FENCEGRD	146.16
96	407623.48	3777634.11	FENCEGRD	146.14
97	407621.61	3777638.51	FENCEGRD	146.05
98	407619.75	3777642.90	FENCEGRD	145.94
99	407617.88	3777647.29	FENCEGRD	145.71
100	407616.01	3777651.69	FENCEGRD	145.39
101	407609.73	3777657.88	FENCEGRD	143.97
102	407605.30	3777659.67	FENCEGRD	143.25
103	407600.88	3777661.47	FENCEGRD	142.53
104	407596.46	3777663.26	FENCEGRD	141.87
105	407592.03	3777665.06	FENCEGRD	141.29
106	407587.61	3777666.85	FENCEGRD	141.10

107	407583.19	3777668.65	FENCEGRD	141.00
108	407578.76	3777670.44	FENCEGRD	140.86
109	407574.34	3777672.24	FENCEGRD	140.66
110	407569.92	3777674.03	FENCEGRD	140.42
111	407565.49	3777675.83	FENCEGRD	140.13
112	407561.07	3777677.63	FENCEGRD	140.13
113	407556.65	3777679.42	FENCEGRD	140.16
114	407552.22	3777681.22	FENCEGRD	140.16
115	407547.80	3777683.01	FENCEGRD	140.11
116	407543.38	3777684.81	FENCEGRD	140.04
117	407538.95	3777686.60	FENCEGRD	139.98
118	407534.53	3777688.40	FENCEGRD	140.00
119	407530.11	3777690.19	FENCEGRD	140.06
120	407651.46	3777568.20	FENCEGRD	138.31
121	407651.51	3777563.29	FENCEGRD	138.23
122	407651.56	3777558.37	FENCEGRD	138.15
123	407651.61	3777553.46	FENCEGRD	138.08
124	407651.65	3777548.54	FENCEGRD	138.01
125	407651.70	3777543.63	FENCEGRD	137.94
126	407651.75	3777538.72	FENCEGRD	137.87
127	407651.80	3777533.80	FENCEGRD	137.79
128	407651.85	3777528.89	FENCEGRD	137.71
129	407651.89	3777523.97	FENCEGRD	137.62
130	407651.94	3777519.06	FENCEGRD	137.52
131	407651.99	3777514.14	FENCEGRD	137.41
132	407652.04	3777509.23	FENCEGRD	137.30
133	407652.08	3777504.31	FENCEGRD	137.18
134	407749.54	3777573.69	FENCEGRD	139.69
135	407747.62	3777578.21	FENCEGRD	139.62
136	407745.70	3777582.73	FENCEGRD	139.63
137	407743.78	3777587.25	FENCEGRD	139.90
138	407741.86	3777591.77	FENCEGRD	140.13
139	407739.94	3777596.29	FENCEGRD	140.98
140	407738.03	3777600.81	FENCEGRD	141.38
141	407736.11	3777605.33	FENCEGRD	141.04
142	407734.19	3777609.85	FENCEGRD	140.39
143	407732.27	3777614.37	FENCEGRD	140.03
144	407730.35	3777618.89	FENCEGRD	140.10

145	407728.43	3777623.41	FENCEGRD	140.16
146	407726.51	3777627.93	FENCEGRD	140.23
147	407724.59	3777632.45	FENCEGRD	140.31
148	407722.67	3777636.97	FENCEGRD	140.41
149	407720.75	3777641.49	FENCEGRD	140.51
150	407718.84	3777646.01	FENCEGRD	140.63
151	407716.92	3777650.52	FENCEGRD	140.76
152	407715.00	3777655.04	FENCEGRD	141.00
153	407713.08	3777659.56	FENCEGRD	141.15
154	407711.16	3777664.08	FENCEGRD	141.20
155	407709.24	3777668.60	FENCEGRD	141.23
156	407707.32	3777673.12	FENCEGRD	141.21
157	407705.40	3777677.64	FENCEGRD	141.29
158	407703.48	3777682.16	FENCEGRD	141.50
159	407701.56	3777686.68	FENCEGRD	141.83
160	407699.64	3777691.20	FENCEGRD	142.29
161	407697.73	3777695.72	FENCEGRD	142.64
162	407695.81	3777700.24	FENCEGRD	142.66
163	407693.89	3777704.76	FENCEGRD	142.70
164	407691.97	3777709.28	FENCEGRD	142.73
165	407690.05	3777713.80	FENCEGRD	142.65
166	407688.13	3777718.32	FENCEGRD	142.60
167	407686.21	3777722.84	FENCEGRD	142.63
168	407679.74	3777729.20	FENCEGRD	142.68
169	407675.19	3777731.05	FENCEGRD	142.65
170	407670.64	3777732.90	FENCEGRD	142.53
171	407666.09	3777734.74	FENCEGRD	142.42
172	407661.54	3777736.59	FENCEGRD	142.55
173	407656.99	3777738.44	FENCEGRD	142.69
174	407652.44	3777740.28	FENCEGRD	142.64
175	407647.89	3777742.13	FENCEGRD	142.58
176	407643.34	3777743.98	FENCEGRD	142.49
177	407638.80	3777745.82	FENCEGRD	142.48
178	407634.25	3777747.67	FENCEGRD	142.55
179	407629.70	3777749.51	FENCEGRD	142.67
180	407625.15	3777751.36	FENCEGRD	142.82
181	407620.60	3777753.21	FENCEGRD	142.84
182	407616.05	3777755.05	FENCEGRD	142.79

183	407611.50	3777756.90	FENCEGRD	142.78
184	407606.95	3777758.75	FENCEGRD	142.76
185	407602.40	3777760.59	FENCEGRD	142.46
186	407597.85	3777762.44	FENCEGRD	142.19
187	407593.30	3777764.29	FENCEGRD	142.18
188	407588.75	3777766.13	FENCEGRD	142.17
189	407584.20	3777767.98	FENCEGRD	142.10
190	407579.65	3777769.83	FENCEGRD	142.02
191	407575.10	3777771.67	FENCEGRD	141.97
192	407570.55	3777773.52	FENCEGRD	141.94
193	407566.00	3777775.37	FENCEGRD	141.90
194	407561.45	3777777.21	FENCEGRD	141.84
195	407556.90	3777779.06	FENCEGRD	141.76
196	407552.35	3777780.91	FENCEGRD	141.69
197	407547.80	3777782.75	FENCEGRD	141.63
198	407543.25	3777784.60	FENCEGRD	141.54
199	407538.70	3777786.45	FENCEGRD	141.42
200	407534.15	3777788.29	FENCEGRD	141.44
201	407529.60	3777790.14	FENCEGRD	141.48
202	407751.46	3777569.17	FENCEGRD	139.69
203	407751.51	3777564.26	FENCEGRD	139.65
204	407751.55	3777559.34	FENCEGRD	139.55
205	407751.60	3777554.43	FENCEGRD	139.37
206	407751.65	3777549.51	FENCEGRD	139.24
207	407751.70	3777544.60	FENCEGRD	139.21
208	407751.75	3777539.69	FENCEGRD	139.17
209	407751.79	3777534.77	FENCEGRD	139.06
210	407751.84	3777529.86	FENCEGRD	138.94
211	407751.89	3777524.94	FENCEGRD	138.74
212	407751.94	3777520.03	FENCEGRD	138.55
213	407751.98	3777515.11	FENCEGRD	138.34
214	407752.03	3777510.20	FENCEGRD	138.13
215	407752.08	3777505.28	FENCEGRD	138.04
216	407849.55	3777574.62	FENCEGRD	140.75
217	407847.65	3777579.10	FENCEGRD	140.68
218	407845.75	3777583.58	FENCEGRD	140.67
219	407843.85	3777588.06	FENCEGRD	140.72
220	407841.94	3777592.54	FENCEGRD	141.47

221	407840.04	3777597.02	FENCEGRD	143.76
222	407838.14	3777601.50	FENCEGRD	146.02
223	407836.24	3777605.98	FENCEGRD	146.63
224	407834.33	3777610.46	FENCEGRD	147.26
225	407832.43	3777614.94	FENCEGRD	147.51
226	407830.53	3777619.43	FENCEGRD	147.59
227	407828.63	3777623.91	FENCEGRD	147.64
228	407826.72	3777628.39	FENCEGRD	147.66
229	407824.82	3777632.87	FENCEGRD	147.67
230	407822.92	3777637.35	FENCEGRD	147.61
231	407821.02	3777641.83	FENCEGRD	147.55
232	407819.11	3777646.31	FENCEGRD	147.22
233	407817.21	3777650.79	FENCEGRD	146.81
234	407815.31	3777655.27	FENCEGRD	145.72
235	407813.41	3777659.75	FENCEGRD	143.91
236	407811.51	3777664.23	FENCEGRD	142.37
237	407809.60	3777668.71	FENCEGRD	142.28
238	407807.70	3777673.19	FENCEGRD	142.22
239	407805.80	3777677.67	FENCEGRD	142.36
240	407803.90	3777682.15	FENCEGRD	142.53
241	407801.99	3777686.63	FENCEGRD	142.69
242	407800.09	3777691.11	FENCEGRD	142.86
243	407798.19	3777695.59	FENCEGRD	142.98
244	407796.29	3777700.07	FENCEGRD	143.09
245	407794.38	3777704.55	FENCEGRD	143.20
246	407792.48	3777709.03	FENCEGRD	143.30
247	407790.58	3777713.51	FENCEGRD	143.40
248	407788.68	3777717.99	FENCEGRD	143.55
249	407786.77	3777722.47	FENCEGRD	143.73
250	407784.87	3777726.95	FENCEGRD	143.84
251	407782.97	3777731.43	FENCEGRD	143.81
252	407781.07	3777735.91	FENCEGRD	143.82
253	407779.17	3777740.39	FENCEGRD	143.86
254	407777.26	3777744.87	FENCEGRD	143.90
255	407775.36	3777749.35	FENCEGRD	143.87
256	407773.46	3777753.83	FENCEGRD	143.90
257	407771.56	3777758.31	FENCEGRD	143.98
258	407769.65	3777762.79	FENCEGRD	144.09

259	407767.75	3777767.27	FENCEGRD	144.20
260	407765.85	3777771.75	FENCEGRD	144.28
261	407763.95	3777776.23	FENCEGRD	144.35
262	407762.04	3777780.71	FENCEGRD	144.40
263	407760.14	3777785.19	FENCEGRD	144.46
264	407758.24	3777789.67	FENCEGRD	144.50
265	407756.34	3777794.15	FENCEGRD	144.55
266	407749.92	3777800.46	FENCEGRD	144.60
267	407745.41	3777802.29	FENCEGRD	144.60
268	407740.90	3777804.12	FENCEGRD	144.58
269	407736.39	3777805.95	FENCEGRD	144.57
270	407731.88	3777807.78	FENCEGRD	144.57
271	407727.37	3777809.61	FENCEGRD	144.57
272	407722.86	3777811.44	FENCEGRD	144.53
273	407718.35	3777813.27	FENCEGRD	144.48
274	407713.84	3777815.10	FENCEGRD	144.57
275	407709.33	3777816.93	FENCEGRD	144.67
276	407704.82	3777818.77	FENCEGRD	144.68
277	407700.31	3777820.60	FENCEGRD	144.69
278	407695.80	3777822.43	FENCEGRD	144.65
279	407691.29	3777824.26	FENCEGRD	144.63
280	407686.78	3777826.09	FENCEGRD	144.60
281	407682.27	3777827.92	FENCEGRD	144.60
282	407677.76	3777829.75	FENCEGRD	144.62
283	407673.25	3777831.58	FENCEGRD	144.65
284	407668.74	3777833.41	FENCEGRD	144.67
285	407664.23	3777835.24	FENCEGRD	144.60
286	407659.72	3777837.07	FENCEGRD	144.48
287	407655.21	3777838.90	FENCEGRD	144.46
288	407650.70	3777840.73	FENCEGRD	144.46
289	407646.19	3777842.56	FENCEGRD	144.42
290	407641.68	3777844.39	FENCEGRD	144.39
291	407637.17	3777846.22	FENCEGRD	144.41
292	407632.66	3777848.05	FENCEGRD	144.42
293	407628.15	3777849.88	FENCEGRD	144.40
294	407623.64	3777851.71	FENCEGRD	144.38
295	407619.14	3777853.54	FENCEGRD	144.33
296	407614.63	3777855.37	FENCEGRD	144.26

297	407610.12	3777857.20	FENCEGRD	144.16
298	407605.61	3777859.04	FENCEGRD	144.08
299	407601.10	3777860.87	FENCEGRD	144.02
300	407596.59	3777862.70	FENCEGRD	143.97
301	407592.08	3777864.53	FENCEGRD	143.94
302	407587.57	3777866.36	FENCEGRD	143.87
303	407583.06	3777868.19	FENCEGRD	143.77
304	407578.55	3777870.02	FENCEGRD	143.73
305	407574.04	3777871.85	FENCEGRD	143.69
306	407569.53	3777873.68	FENCEGRD	143.72
307	407565.02	3777875.51	FENCEGRD	143.74
308	407560.51	3777877.34	FENCEGRD	143.77
309	407556.00	3777879.17	FENCEGRD	143.79
310	407551.49	3777881.00	FENCEGRD	143.69
311	407546.98	3777882.83	FENCEGRD	143.62
312	407542.47	3777884.66	FENCEGRD	143.66
313	407537.96	3777886.49	FENCEGRD	143.69
314	407533.45	3777888.32	FENCEGRD	143.66
315	407528.94	3777890.15	FENCEGRD	143.63
316	407851.45	3777570.14	FENCEGRD	140.82
317	407851.50	3777565.23	FENCEGRD	140.66
318	407851.55	3777560.31	FENCEGRD	140.50
319	407851.60	3777555.40	FENCEGRD	140.28
320	407851.65	3777550.49	FENCEGRD	140.05
321	407851.69	3777545.57	FENCEGRD	139.93
322	407851.74	3777540.66	FENCEGRD	139.83
323	407851.79	3777535.74	FENCEGRD	139.74
324	407851.84	3777530.83	FENCEGRD	139.66
325	407851.88	3777525.91	FENCEGRD	139.61
326	407851.93	3777521.00	FENCEGRD	139.56
327	407851.98	3777516.08	FENCEGRD	139.46
328	407852.03	3777511.17	FENCEGRD	139.33
329	407852.07	3777506.25	FENCEGRD	139.17
330	407949.56	3777575.57	FENCEGRD	141.81
331	407947.66	3777580.03	FENCEGRD	141.72
332	407945.77	3777584.49	FENCEGRD	142.02
333	407943.88	3777588.95	FENCEGRD	142.28
334	407941.98	3777593.41	FENCEGRD	143.45

335	407940.09	3777597.87	FENCEGRD	145.03
336	407938.19	3777602.33	FENCEGRD	146.26
337	407936.30	3777606.79	FENCEGRD	146.94
338	407934.41	3777611.25	FENCEGRD	147.55
339	407932.51	3777615.71	FENCEGRD	147.60
340	407930.62	3777620.17	FENCEGRD	147.65
341	407928.73	3777624.63	FENCEGRD	147.66
342	407926.83	3777629.09	FENCEGRD	147.67
343	407924.94	3777633.55	FENCEGRD	147.63
344	407923.05	3777638.01	FENCEGRD	147.55
345	407921.15	3777642.47	FENCEGRD	147.42
346	407919.26	3777646.93	FENCEGRD	147.07
347	407917.36	3777651.39	FENCEGRD	146.71
348	407915.47	3777655.85	FENCEGRD	145.37
349	407913.58	3777660.31	FENCEGRD	143.85
350	407911.68	3777664.76	FENCEGRD	143.18
351	407909.79	3777669.22	FENCEGRD	143.24
352	407907.90	3777673.68	FENCEGRD	143.33
353	407906.00	3777678.14	FENCEGRD	143.48
354	407904.11	3777682.60	FENCEGRD	143.64
355	407902.22	3777687.06	FENCEGRD	143.76
356	407900.32	3777691.52	FENCEGRD	143.86
357	407898.43	3777695.98	FENCEGRD	143.95
358	407896.53	3777700.44	FENCEGRD	144.05
359	407894.64	3777704.90	FENCEGRD	144.15
360	407892.75	3777709.36	FENCEGRD	144.22
361	407890.85	3777713.82	FENCEGRD	144.28
362	407888.96	3777718.28	FENCEGRD	144.29
363	407887.07	3777722.74	FENCEGRD	144.30
364	407885.17	3777727.20	FENCEGRD	144.48
365	407883.28	3777731.66	FENCEGRD	144.68
366	407881.39	3777736.12	FENCEGRD	144.76
367	407879.49	3777740.58	FENCEGRD	144.74
368	407877.60	3777745.04	FENCEGRD	144.82
369	407875.71	3777749.50	FENCEGRD	144.88
370	407873.81	3777753.96	FENCEGRD	144.95
371	407871.92	3777758.42	FENCEGRD	145.07
372	407870.02	3777762.87	FENCEGRD	145.20

373	407868.13	3777767.33	FENCEGRD	145.26
374	407866.24	3777771.79	FENCEGRD	145.23
375	407864.34	3777776.25	FENCEGRD	145.23
376	407862.45	3777780.71	FENCEGRD	145.45
377	407860.56	3777785.17	FENCEGRD	145.65
378	407858.66	3777789.63	FENCEGRD	145.74
379	407856.77	3777794.09	FENCEGRD	145.84
380	407854.88	3777798.55	FENCEGRD	145.91
381	407852.98	3777803.01	FENCEGRD	145.95
382	407851.09	3777807.47	FENCEGRD	145.99
383	407849.19	3777811.93	FENCEGRD	146.13
384	407847.30	3777816.39	FENCEGRD	146.27
385	407845.41	3777820.85	FENCEGRD	146.38
386	407843.51	3777825.31	FENCEGRD	146.48
387	407841.62	3777829.77	FENCEGRD	146.56
388	407839.73	3777834.23	FENCEGRD	146.63
389	407837.83	3777838.69	FENCEGRD	146.68
390	407835.94	3777843.15	FENCEGRD	146.68
391	407834.05	3777847.61	FENCEGRD	146.70
392	407832.15	3777852.07	FENCEGRD	146.75
393	407830.26	3777856.53	FENCEGRD	146.78
394	407828.36	3777860.99	FENCEGRD	146.80
395	407826.47	3777865.44	FENCEGRD	146.84
396	407820.09	3777871.73	FENCEGRD	146.94
397	407815.60	3777873.55	FENCEGRD	146.90
398	407811.11	3777875.37	FENCEGRD	146.90
399	407806.62	3777877.19	FENCEGRD	146.94
400	407802.13	3777879.01	FENCEGRD	146.95
401	407797.64	3777880.84	FENCEGRD	146.99
402	407793.15	3777882.66	FENCEGRD	147.02
403	407788.66	3777884.48	FENCEGRD	147.03
404	407784.17	3777886.30	FENCEGRD	147.04
405	407779.68	3777888.12	FENCEGRD	147.04
406	407775.20	3777889.95	FENCEGRD	147.06
407	407770.71	3777891.77	FENCEGRD	147.07
408	407766.22	3777893.59	FENCEGRD	147.06
409	407761.73	3777895.41	FENCEGRD	147.03
410	407757.24	3777897.23	FENCEGRD	147.01

411	407752.75	3777899.06	FENCEGRD	146.98
412	407748.26	3777900.88	FENCEGRD	146.95
413	407743.77	3777902.70	FENCEGRD	146.92
414	407739.28	3777904.52	FENCEGRD	146.87
415	407734.79	3777906.35	FENCEGRD	146.82
416	407730.30	3777908.17	FENCEGRD	146.80
417	407725.81	3777909.99	FENCEGRD	146.78
418	407721.32	3777911.81	FENCEGRD	146.73
419	407716.83	3777913.63	FENCEGRD	146.71
420	407712.35	3777915.46	FENCEGRD	146.78
421	407707.86	3777917.28	FENCEGRD	146.87
422	407703.37	3777919.10	FENCEGRD	146.91
423	407698.88	3777920.92	FENCEGRD	146.94
424	407694.39	3777922.74	FENCEGRD	146.88
425	407689.90	3777924.57	FENCEGRD	146.79
426	407685.41	3777926.39	FENCEGRD	146.70
427	407680.92	3777928.21	FENCEGRD	146.64
428	407676.43	3777930.03	FENCEGRD	146.56
429	407671.94	3777931.85	FENCEGRD	146.52
430	407667.45	3777933.68	FENCEGRD	146.47
431	407662.96	3777935.50	FENCEGRD	146.40
432	407658.47	3777937.32	FENCEGRD	146.37
433	407653.99	3777939.14	FENCEGRD	146.44
434	407649.50	3777940.96	FENCEGRD	146.46
435	407645.01	3777942.79	FENCEGRD	146.36
436	407640.52	3777944.61	FENCEGRD	146.30
437	407636.03	3777946.43	FENCEGRD	146.30
438	407631.54	3777948.25	FENCEGRD	146.29
439	407627.05	3777950.07	FENCEGRD	146.25
440	407622.56	3777951.90	FENCEGRD	146.20
441	407618.07	3777953.72	FENCEGRD	146.15
442	407613.58	3777955.54	FENCEGRD	146.14
443	407609.09	3777957.36	FENCEGRD	146.17
444	407604.60	3777959.18	FENCEGRD	146.18
445	407600.11	3777961.01	FENCEGRD	146.20
446	407595.62	3777962.83	FENCEGRD	146.13
447	407591.14	3777964.65	FENCEGRD	146.03
448	407586.65	3777966.47	FENCEGRD	146.02

449	407582.16	3777968.29	FENCEGRD	146.00
450	407577.67	3777970.12	FENCEGRD	145.95
451	407573.18	3777971.94	FENCEGRD	145.92
452	407568.69	3777973.76	FENCEGRD	145.94
453	407564.20	3777975.58	FENCEGRD	145.98
454	407559.71	3777977.41	FENCEGRD	146.00
455	407555.22	3777979.23	FENCEGRD	145.99
456	407550.73	3777981.05	FENCEGRD	145.93
457	407546.24	3777982.87	FENCEGRD	145.91
458	407541.75	3777984.69	FENCEGRD	145.95
459	407537.26	3777986.52	FENCEGRD	145.86
460	407532.77	3777988.34	FENCEGRD	145.70
461	407528.29	3777990.16	FENCEGRD	145.59
462	407951.45	3777571.11	FENCEGRD	141.95
463	407951.50	3777566.20	FENCEGRD	141.95
464	407951.55	3777561.28	FENCEGRD	141.90
465	407951.59	3777556.37	FENCEGRD	141.82
466	407951.64	3777551.46	FENCEGRD	141.71
467	407951.69	3777546.54	FENCEGRD	141.61
468	407951.74	3777541.63	FENCEGRD	141.51
469	407951.78	3777536.71	FENCEGRD	141.39
470	407951.83	3777531.80	FENCEGRD	141.25
471	407951.88	3777526.88	FENCEGRD	141.14
472	407951.93	3777521.97	FENCEGRD	141.10
473	407951.97	3777517.05	FENCEGRD	141.03
474	407952.02	3777512.14	FENCEGRD	140.86
475	407952.07	3777507.22	FENCEGRD	140.65
476	407527.06	3777498.10	FENCEGRD	136.13
477	407522.10	3777498.13	FENCEGRD	136.07
478	407517.14	3777498.15	FENCEGRD	136.04
479	407512.18	3777498.18	FENCEGRD	136.05
480	407507.22	3777498.20	FENCEGRD	136.04
481	407502.26	3777498.23	FENCEGRD	136.01
482	407497.30	3777498.25	FENCEGRD	135.99
483	407492.34	3777498.28	FENCEGRD	135.96
484	407487.38	3777498.30	FENCEGRD	135.92
485	407482.42	3777498.33	FENCEGRD	135.87
486	407477.46	3777498.36	FENCEGRD	135.79

487	407472.50	3777498.38	FENCEGRD	135.73
488	407467.54	3777498.41	FENCEGRD	135.67
489	407462.58	3777498.43	FENCEGRD	135.55
490	407457.62	3777498.46	FENCEGRD	135.43
491	407452.66	3777498.48	FENCEGRD	135.38
492	407447.70	3777498.51	FENCEGRD	135.30
493	407442.74	3777498.53	FENCEGRD	135.19
494	407437.78	3777498.56	FENCEGRD	135.08
495	407432.81	3777498.58	FENCEGRD	134.98
496	407427.85	3777498.61	FENCEGRD	134.90
497	407422.89	3777498.64	FENCEGRD	134.81
498	407417.93	3777498.66	FENCEGRD	134.72
499	407412.97	3777498.69	FENCEGRD	134.64
500	407408.01	3777498.71	FENCEGRD	134.56
501	407403.05	3777498.74	FENCEGRD	134.53
502	407398.09	3777498.76	FENCEGRD	134.50
503	407393.13	3777498.79	FENCEGRD	134.45
504	407388.17	3777498.81	FENCEGRD	134.40
505	407383.21	3777498.84	FENCEGRD	134.35
506	407378.25	3777498.87	FENCEGRD	134.30
507	407373.29	3777498.89	FENCEGRD	134.25
508	407368.33	3777498.92	FENCEGRD	134.20
509	407363.37	3777498.94	FENCEGRD	134.15
510	407358.41	3777498.97	FENCEGRD	134.11
511	407353.45	3777498.99	FENCEGRD	134.06
512	407348.49	3777499.02	FENCEGRD	134.02
513	407343.53	3777499.04	FENCEGRD	133.97
514	407338.57	3777499.07	FENCEGRD	133.92
515	407333.60	3777499.09	FENCEGRD	133.81
516	407328.64	3777499.12	FENCEGRD	133.79
517	407530.61	3777494.57	FENCEGRD	135.98
518	407522.08	3777493.13	FENCEGRD	135.94
519	407517.12	3777493.15	FENCEGRD	135.91
520	407512.16	3777493.18	FENCEGRD	135.90
521	407507.20	3777493.20	FENCEGRD	135.88
522	407502.24	3777493.23	FENCEGRD	135.86
523	407497.28	3777493.25	FENCEGRD	135.83
524	407492.32	3777493.28	FENCEGRD	135.80

525	407487.35	3777493.30	FENCEGRD	135.77
526	407482.39	3777493.33	FENCEGRD	135.73
527	407477.43	3777493.36	FENCEGRD	135.68
528	407472.47	3777493.38	FENCEGRD	135.62
529	407467.51	3777493.41	FENCEGRD	135.54
530	407462.55	3777493.43	FENCEGRD	135.45
531	407457.59	3777493.46	FENCEGRD	135.36
532	407452.63	3777493.48	FENCEGRD	135.27
533	407447.67	3777493.51	FENCEGRD	135.19
534	407442.71	3777493.53	FENCEGRD	135.09
535	407437.75	3777493.56	FENCEGRD	135.00
536	407432.79	3777493.58	FENCEGRD	134.91
537	407427.83	3777493.61	FENCEGRD	134.81
538	407422.87	3777493.64	FENCEGRD	134.72
539	407417.91	3777493.66	FENCEGRD	134.63
540	407412.95	3777493.69	FENCEGRD	134.55
541	407407.99	3777493.71	FENCEGRD	134.48
542	407403.03	3777493.74	FENCEGRD	134.42
543	407398.07	3777493.76	FENCEGRD	134.37
544	407393.11	3777493.79	FENCEGRD	134.32
545	407388.14	3777493.81	FENCEGRD	134.27
546	407383.18	3777493.84	FENCEGRD	134.21
547	407378.22	3777493.87	FENCEGRD	134.16
548	407373.26	3777493.89	FENCEGRD	134.11
549	407368.30	3777493.92	FENCEGRD	134.06
550	407363.34	3777493.94	FENCEGRD	134.01
551	407358.38	3777493.97	FENCEGRD	133.96
552	407353.42	3777493.99	FENCEGRD	133.91
553	407348.46	3777494.02	FENCEGRD	133.88
554	407343.50	3777494.04	FENCEGRD	133.84
555	407338.54	3777494.07	FENCEGRD	133.80
556	407333.58	3777494.09	FENCEGRD	133.72
557	407328.62	3777494.12	FENCEGRD	133.72
558	407530.58	3777489.57	FENCEGRD	135.89
559	407539.18	3777496.09	FENCEGRD	136.02
560	407522.05	3777488.13	FENCEGRD	135.89
561	407517.09	3777488.15	FENCEGRD	135.89
562	407512.13	3777488.18	FENCEGRD	135.90

563	407507.17	3777488.20	FENCEGRD	135.88
564	407502.21	3777488.23	FENCEGRD	135.86
565	407497.25	3777488.25	FENCEGRD	135.83
566	407492.29	3777488.28	FENCEGRD	135.79
567	407487.33	3777488.30	FENCEGRD	135.75
568	407482.37	3777488.33	FENCEGRD	135.72
569	407477.41	3777488.36	FENCEGRD	135.69
570	407472.45	3777488.38	FENCEGRD	135.62
571	407467.49	3777488.41	FENCEGRD	135.55
572	407462.53	3777488.43	FENCEGRD	135.42
573	407457.57	3777488.46	FENCEGRD	135.31
574	407452.61	3777488.48	FENCEGRD	135.21
575	407447.64	3777488.51	FENCEGRD	135.11
576	407442.68	3777488.53	FENCEGRD	135.01
577	407437.72	3777488.56	FENCEGRD	134.94
578	407432.76	3777488.58	FENCEGRD	134.87
579	407427.80	3777488.61	FENCEGRD	134.73
580	407422.84	3777488.64	FENCEGRD	134.60
581	407417.88	3777488.66	FENCEGRD	134.51
582	407412.92	3777488.69	FENCEGRD	134.44
583	407407.96	3777488.71	FENCEGRD	134.41
584	407403.00	3777488.74	FENCEGRD	134.35
585	407398.04	3777488.76	FENCEGRD	134.29
586	407393.08	3777488.79	FENCEGRD	134.25
587	407388.12	3777488.81	FENCEGRD	134.20
588	407383.16	3777488.84	FENCEGRD	134.15
589	407378.20	3777488.87	FENCEGRD	134.13
590	407373.24	3777488.89	FENCEGRD	134.12
591	407368.28	3777488.92	FENCEGRD	134.07
592	407363.32	3777488.94	FENCEGRD	134.03
593	407358.36	3777488.97	FENCEGRD	133.98
594	407353.40	3777488.99	FENCEGRD	133.94
595	407348.43	3777489.02	FENCEGRD	133.90
596	407343.47	3777489.04	FENCEGRD	133.84
597	407338.51	3777489.07	FENCEGRD	133.77
598	407333.55	3777489.09	FENCEGRD	133.68
599	407328.59	3777489.12	FENCEGRD	133.65
600	407530.56	3777484.57	FENCEGRD	135.87

601	407537.70	3777487.52	FENCEGRD	135.87
602	407542.72	3777492.57	FENCEGRD	135.97
603	407522.03	3777483.13	FENCEGRD	135.89
604	407517.07	3777483.15	FENCEGRD	135.92
605	407512.11	3777483.18	FENCEGRD	135.95
606	407507.15	3777483.20	FENCEGRD	135.95
607	407502.18	3777483.23	FENCEGRD	135.92
608	407497.22	3777483.25	FENCEGRD	135.87
609	407492.26	3777483.28	FENCEGRD	135.82
610	407487.30	3777483.30	FENCEGRD	135.78
611	407482.34	3777483.33	FENCEGRD	135.75
612	407477.38	3777483.36	FENCEGRD	135.73
613	407472.42	3777483.38	FENCEGRD	135.67
614	407467.46	3777483.41	FENCEGRD	135.59
615	407462.50	3777483.43	FENCEGRD	135.42
616	407457.54	3777483.46	FENCEGRD	135.26
617	407452.58	3777483.48	FENCEGRD	135.15
618	407447.62	3777483.51	FENCEGRD	135.04
619	407442.66	3777483.53	FENCEGRD	134.93
620	407437.70	3777483.56	FENCEGRD	134.89
621	407432.74	3777483.58	FENCEGRD	134.85
622	407427.78	3777483.61	FENCEGRD	134.65
623	407422.82	3777483.64	FENCEGRD	134.48
624	407417.86	3777483.66	FENCEGRD	134.37
625	407412.90	3777483.69	FENCEGRD	134.33
626	407407.94	3777483.71	FENCEGRD	134.34
627	407402.97	3777483.74	FENCEGRD	134.29
628	407398.01	3777483.76	FENCEGRD	134.23
629	407393.05	3777483.79	FENCEGRD	134.18
630	407388.09	3777483.81	FENCEGRD	134.15
631	407383.13	3777483.84	FENCEGRD	134.12
632	407378.17	3777483.87	FENCEGRD	134.12
633	407373.21	3777483.89	FENCEGRD	134.14
634	407368.25	3777483.92	FENCEGRD	134.11
635	407363.29	3777483.94	FENCEGRD	134.08
636	407358.33	3777483.97	FENCEGRD	134.04
637	407353.37	3777483.99	FENCEGRD	134.00
638	407348.41	3777484.02	FENCEGRD	133.95

639	407343.45	3777484.04	FENCEGRD	133.86
640	407338.49	3777484.07	FENCEGRD	133.76
641	407333.53	3777484.09	FENCEGRD	133.64
642	407328.57	3777484.12	FENCEGRD	133.58
643	407531.42	3777479.94	FENCEGRD	135.82
644	407535.88	3777481.78	FENCEGRD	135.85
645	407540.35	3777483.62	FENCEGRD	135.81
646	407546.63	3777489.93	FENCEGRD	135.92
647	407548.45	3777494.40	FENCEGRD	136.04
648	407550.27	3777498.87	FENCEGRD	136.16
649	407526.96	3777478.10	FENCEGRD	135.80
650	407522.00	3777478.13	FENCEGRD	135.89
651	407517.04	3777478.15	FENCEGRD	135.97
652	407512.08	3777478.18	FENCEGRD	136.01
653	407507.12	3777478.20	FENCEGRD	136.00
654	407502.16	3777478.23	FENCEGRD	135.95
655	407497.20	3777478.25	FENCEGRD	135.90
656	407492.24	3777478.28	FENCEGRD	135.85
657	407487.28	3777478.30	FENCEGRD	135.81
658	407482.32	3777478.33	FENCEGRD	135.78
659	407477.36	3777478.36	FENCEGRD	135.76
660	407472.40	3777478.38	FENCEGRD	135.70
661	407467.44	3777478.41	FENCEGRD	135.63
662	407462.47	3777478.43	FENCEGRD	135.41
663	407457.51	3777478.46	FENCEGRD	135.19
664	407452.55	3777478.48	FENCEGRD	135.00
665	407447.59	3777478.51	FENCEGRD	134.87
666	407442.63	3777478.53	FENCEGRD	134.80
667	407437.67	3777478.56	FENCEGRD	134.78
668	407432.71	3777478.58	FENCEGRD	134.76
669	407427.75	3777478.61	FENCEGRD	134.55
670	407422.79	3777478.64	FENCEGRD	134.38
671	407417.83	3777478.66	FENCEGRD	134.30
672	407412.87	3777478.69	FENCEGRD	134.27
673	407407.91	3777478.71	FENCEGRD	134.27
674	407402.95	3777478.74	FENCEGRD	134.22
675	407397.99	3777478.76	FENCEGRD	134.18
676	407393.03	3777478.79	FENCEGRD	134.17

677	407388.07	3777478.81	FENCEGRD	134.16
678	407383.11	3777478.84	FENCEGRD	134.14
679	407378.15	3777478.87	FENCEGRD	134.15
680	407373.19	3777478.89	FENCEGRD	134.16
681	407368.23	3777478.92	FENCEGRD	134.13
682	407363.26	3777478.94	FENCEGRD	134.10
683	407358.30	3777478.97	FENCEGRD	134.07
684	407353.34	3777478.99	FENCEGRD	134.02
685	407348.38	3777479.02	FENCEGRD	133.97
686	407343.42	3777479.04	FENCEGRD	133.87
687	407338.46	3777479.07	FENCEGRD	133.76
688	407333.50	3777479.09	FENCEGRD	133.58
689	407328.54	3777479.12	FENCEGRD	133.49
690	407530.91	3777379.94	FENCEGRD	133.82
691	407535.37	3777381.78	FENCEGRD	133.78
692	407539.83	3777383.62	FENCEGRD	133.77
693	407544.29	3777385.46	FENCEGRD	133.78
694	407548.76	3777387.30	FENCEGRD	133.83
695	407553.22	3777389.15	FENCEGRD	133.86
696	407557.68	3777390.99	FENCEGRD	133.86
697	407562.14	3777392.83	FENCEGRD	134.00
698	407566.60	3777394.67	FENCEGRD	134.29
699	407571.06	3777396.51	FENCEGRD	134.60
700	407575.53	3777398.35	FENCEGRD	134.87
701	407579.99	3777400.19	FENCEGRD	134.95
702	407584.45	3777402.03	FENCEGRD	134.97
703	407588.91	3777403.87	FENCEGRD	134.97
704	407593.37	3777405.71	FENCEGRD	134.97
705	407597.83	3777407.55	FENCEGRD	134.97
706	407602.29	3777409.39	FENCEGRD	134.97
707	407606.76	3777411.23	FENCEGRD	134.96
708	407611.22	3777413.07	FENCEGRD	134.92
709	407617.50	3777419.38	FENCEGRD	134.81
710	407619.32	3777423.85	FENCEGRD	135.08
711	407621.14	3777428.32	FENCEGRD	135.37
712	407622.96	3777432.79	FENCEGRD	135.52
713	407624.78	3777437.26	FENCEGRD	135.63
714	407626.60	3777441.73	FENCEGRD	135.74

715	407628.42	3777446.20	FENCEGRD	135.87
716	407630.24	3777450.67	FENCEGRD	135.96
717	407632.06	3777455.14	FENCEGRD	135.96
718	407633.88	3777459.61	FENCEGRD	135.98
719	407635.70	3777464.08	FENCEGRD	135.92
720	407637.52	3777468.55	FENCEGRD	135.85
721	407639.34	3777473.02	FENCEGRD	135.89
722	407641.16	3777477.49	FENCEGRD	135.98
723	407642.98	3777481.96	FENCEGRD	136.14
724	407644.80	3777486.43	FENCEGRD	136.41
725	407646.62	3777490.90	FENCEGRD	136.68
726	407648.44	3777495.37	FENCEGRD	136.85
727	407650.26	3777499.84	FENCEGRD	137.03
728	407526.45	3777378.10	FENCEGRD	133.84
729	407521.49	3777378.13	FENCEGRD	133.87
730	407516.53	3777378.15	FENCEGRD	133.88
731	407511.57	3777378.18	FENCEGRD	133.85
732	407506.61	3777378.20	FENCEGRD	133.83
733	407501.64	3777378.23	FENCEGRD	133.80
734	407496.68	3777378.25	FENCEGRD	133.78
735	407491.72	3777378.28	FENCEGRD	133.76
736	407486.76	3777378.31	FENCEGRD	133.66
737	407481.80	3777378.33	FENCEGRD	133.57
738	407476.84	3777378.36	FENCEGRD	133.51
739	407471.88	3777378.38	FENCEGRD	133.48
740	407466.92	3777378.41	FENCEGRD	133.46
741	407461.96	3777378.43	FENCEGRD	133.45
742	407457.00	3777378.46	FENCEGRD	133.45
743	407452.04	3777378.48	FENCEGRD	133.44
744	407447.08	3777378.51	FENCEGRD	133.41
745	407442.12	3777378.54	FENCEGRD	133.37
746	407437.16	3777378.56	FENCEGRD	133.31
747	407432.20	3777378.59	FENCEGRD	133.24
748	407427.24	3777378.61	FENCEGRD	133.17
749	407422.28	3777378.64	FENCEGRD	133.10
750	407417.32	3777378.66	FENCEGRD	133.07
751	407412.36	3777378.69	FENCEGRD	133.03
752	407407.40	3777378.71	FENCEGRD	132.99

753	407402.43	3777378.74	FENCEGRD	132.89
754	407397.47	3777378.76	FENCEGRD	132.79
755	407392.51	3777378.79	FENCEGRD	132.69
756	407387.55	3777378.82	FENCEGRD	132.58
757	407382.59	3777378.84	FENCEGRD	132.44
758	407377.63	3777378.87	FENCEGRD	132.27
759	407372.67	3777378.89	FENCEGRD	132.09
760	407367.71	3777378.92	FENCEGRD	132.36
761	407362.75	3777378.94	FENCEGRD	132.60
762	407357.79	3777378.97	FENCEGRD	132.51
763	407352.83	3777378.99	FENCEGRD	132.42
764	407347.87	3777379.02	FENCEGRD	132.35
765	407342.91	3777379.05	FENCEGRD	132.29
766	407337.95	3777379.07	FENCEGRD	132.22
767	407332.99	3777379.10	FENCEGRD	132.08
768	407328.03	3777379.12	FENCEGRD	131.97
769	407530.39	3777279.94	FENCEGRD	131.26
770	407534.86	3777281.78	FENCEGRD	131.40
771	407539.32	3777283.62	FENCEGRD	131.47
772	407543.78	3777285.47	FENCEGRD	131.54
773	407548.24	3777287.31	FENCEGRD	131.65
774	407552.70	3777289.15	FENCEGRD	131.76
775	407557.16	3777290.99	FENCEGRD	131.85
776	407561.63	3777292.83	FENCEGRD	131.92
777	407566.09	3777294.67	FENCEGRD	131.99
778	407570.55	3777296.51	FENCEGRD	132.05
779	407575.01	3777298.35	FENCEGRD	132.06
780	407579.47	3777300.19	FENCEGRD	132.05
781	407583.93	3777302.03	FENCEGRD	132.06
782	407588.40	3777303.87	FENCEGRD	132.09
783	407592.86	3777305.71	FENCEGRD	132.17
784	407597.32	3777307.55	FENCEGRD	132.40
785	407601.78	3777309.39	FENCEGRD	132.66
786	407606.24	3777311.23	FENCEGRD	132.85
787	407610.70	3777313.07	FENCEGRD	133.05
788	407615.17	3777314.91	FENCEGRD	133.19
789	407619.63	3777316.76	FENCEGRD	133.30
790	407624.09	3777318.60	FENCEGRD	133.37

791	407628.55	3777320.44	FENCEGRD	133.42
792	407633.01	3777322.28	FENCEGRD	133.43
793	407637.47	3777324.12	FENCEGRD	133.45
794	407641.94	3777325.96	FENCEGRD	133.45
795	407646.40	3777327.80	FENCEGRD	133.60
796	407650.86	3777329.64	FENCEGRD	133.90
797	407655.32	3777331.48	FENCEGRD	134.03
798	407659.78	3777333.32	FENCEGRD	134.03
799	407664.24	3777335.16	FENCEGRD	134.04
800	407668.71	3777337.00	FENCEGRD	134.07
801	407673.17	3777338.84	FENCEGRD	134.11
802	407677.63	3777340.68	FENCEGRD	134.14
803	407682.09	3777342.52	FENCEGRD	134.17
804	407688.37	3777348.83	FENCEGRD	134.31
805	407690.19	3777353.30	FENCEGRD	134.45
806	407692.01	3777357.77	FENCEGRD	134.57
807	407693.83	3777362.24	FENCEGRD	134.70
808	407695.65	3777366.71	FENCEGRD	134.76
809	407697.47	3777371.18	FENCEGRD	134.96
810	407699.29	3777375.65	FENCEGRD	135.15
811	407701.11	3777380.12	FENCEGRD	135.14
812	407702.93	3777384.59	FENCEGRD	135.10
813	407704.75	3777389.06	FENCEGRD	135.14
814	407706.57	3777393.53	FENCEGRD	135.24
815	407708.39	3777398.00	FENCEGRD	135.32
816	407710.21	3777402.47	FENCEGRD	135.38
817	407712.03	3777406.94	FENCEGRD	135.45
818	407713.85	3777411.41	FENCEGRD	135.52
819	407715.68	3777415.88	FENCEGRD	135.67
820	407717.50	3777420.35	FENCEGRD	135.82
821	407719.32	3777424.82	FENCEGRD	135.97
822	407721.14	3777429.29	FENCEGRD	136.11
823	407722.96	3777433.76	FENCEGRD	136.26
824	407724.78	3777438.23	FENCEGRD	136.36
825	407726.60	3777442.70	FENCEGRD	136.44
826	407728.42	3777447.17	FENCEGRD	136.51
827	407730.24	3777451.64	FENCEGRD	136.61
828	407732.06	3777456.11	FENCEGRD	136.77

829	407733.88	3777460.58	FENCEGRD	136.92
830	407735.70	3777465.05	FENCEGRD	137.03
831	407737.52	3777469.52	FENCEGRD	137.16
832	407739.34	3777473.99	FENCEGRD	137.38
833	407741.16	3777478.46	FENCEGRD	137.57
834	407742.98	3777482.93	FENCEGRD	137.60
835	407744.80	3777487.40	FENCEGRD	137.61
836	407746.62	3777491.87	FENCEGRD	137.70
837	407748.44	3777496.34	FENCEGRD	137.83
838	407750.26	3777500.81	FENCEGRD	137.95
839	407525.93	3777278.10	FENCEGRD	131.13
840	407520.97	3777278.13	FENCEGRD	131.16
841	407516.01	3777278.15	FENCEGRD	131.20
842	407511.05	3777278.18	FENCEGRD	131.13
843	407506.09	3777278.20	FENCEGRD	131.10
844	407501.13	3777278.23	FENCEGRD	131.12
845	407496.17	3777278.26	FENCEGRD	131.13
846	407491.21	3777278.28	FENCEGRD	131.13
847	407486.25	3777278.31	FENCEGRD	131.05
848	407481.29	3777278.33	FENCEGRD	130.97
849	407476.33	3777278.36	FENCEGRD	130.93
850	407471.37	3777278.38	FENCEGRD	130.90
851	407466.41	3777278.41	FENCEGRD	130.88
852	407461.45	3777278.43	FENCEGRD	130.87
853	407456.49	3777278.46	FENCEGRD	130.85
854	407451.53	3777278.49	FENCEGRD	130.84
855	407446.57	3777278.51	FENCEGRD	130.81
856	407441.60	3777278.54	FENCEGRD	130.77
857	407436.64	3777278.56	FENCEGRD	130.72
858	407431.68	3777278.59	FENCEGRD	130.68
859	407426.72	3777278.61	FENCEGRD	130.62
860	407421.76	3777278.64	FENCEGRD	130.56
861	407416.80	3777278.66	FENCEGRD	130.53
862	407411.84	3777278.69	FENCEGRD	130.50
863	407406.88	3777278.71	FENCEGRD	130.47
864	407401.92	3777278.74	FENCEGRD	130.44
865	407396.96	3777278.77	FENCEGRD	130.41
866	407392.00	3777278.79	FENCEGRD	130.38

867	407387.04	3777278.82	FENCEGRD	130.35
868	407382.08	3777278.84	FENCEGRD	130.32
869	407377.12	3777278.87	FENCEGRD	130.28
870	407372.16	3777278.89	FENCEGRD	130.25
871	407367.20	3777278.92	FENCEGRD	130.22
872	407362.24	3777278.94	FENCEGRD	130.19
873	407357.28	3777278.97	FENCEGRD	130.18
874	407352.32	3777279.00	FENCEGRD	130.15
875	407347.36	3777279.02	FENCEGRD	130.10
876	407342.39	3777279.05	FENCEGRD	130.06
877	407337.43	3777279.07	FENCEGRD	130.04
878	407332.47	3777279.10	FENCEGRD	130.03
879	407327.51	3777279.12	FENCEGRD	130.01
880	407529.97	3777179.98	FENCEGRD	129.52
881	407534.52	3777181.86	FENCEGRD	129.56
882	407539.07	3777183.73	FENCEGRD	129.62
883	407543.62	3777185.61	FENCEGRD	129.66
884	407548.16	3777187.49	FENCEGRD	129.68
885	407552.71	3777189.36	FENCEGRD	129.86
886	407557.26	3777191.24	FENCEGRD	130.20
887	407561.81	3777193.12	FENCEGRD	130.21
888	407566.36	3777194.99	FENCEGRD	130.10
889	407570.91	3777196.87	FENCEGRD	130.14
890	407575.46	3777198.75	FENCEGRD	130.19
891	407580.01	3777200.62	FENCEGRD	130.24
892	407584.56	3777202.50	FENCEGRD	130.33
893	407589.11	3777204.38	FENCEGRD	130.57
894	407593.66	3777206.25	FENCEGRD	130.66
895	407598.20	3777208.13	FENCEGRD	130.66
896	407602.75	3777210.01	FENCEGRD	130.71
897	407607.30	3777211.88	FENCEGRD	130.74
898	407611.85	3777213.76	FENCEGRD	130.79
899	407616.40	3777215.64	FENCEGRD	130.87
900	407620.95	3777217.51	FENCEGRD	130.86
901	407625.50	3777219.39	FENCEGRD	130.82
902	407630.05	3777221.27	FENCEGRD	130.83
903	407634.60	3777223.14	FENCEGRD	130.83
904	407639.15	3777225.02	FENCEGRD	130.79

905	407643.70	3777226.90	FENCEGRD	130.74
906	407648.25	3777228.77	FENCEGRD	131.00
907	407652.79	3777230.65	FENCEGRD	131.25
908	407657.34	3777232.53	FENCEGRD	131.43
909	407661.89	3777234.40	FENCEGRD	131.59
910	407666.44	3777236.28	FENCEGRD	131.71
911	407670.99	3777238.16	FENCEGRD	131.78
912	407675.54	3777240.03	FENCEGRD	131.86
913	407680.09	3777241.91	FENCEGRD	131.90
914	407684.64	3777243.79	FENCEGRD	131.85
915	407689.19	3777245.66	FENCEGRD	131.93
916	407693.74	3777247.54	FENCEGRD	132.08
917	407698.29	3777249.42	FENCEGRD	132.37
918	407702.83	3777251.30	FENCEGRD	132.65
919	407707.38	3777253.17	FENCEGRD	132.77
920	407711.93	3777255.05	FENCEGRD	132.86
921	407716.48	3777256.93	FENCEGRD	132.94
922	407721.03	3777258.80	FENCEGRD	133.03
923	407725.58	3777260.68	FENCEGRD	133.08
924	407730.13	3777262.56	FENCEGRD	133.14
925	407734.68	3777264.43	FENCEGRD	133.13
926	407739.23	3777266.31	FENCEGRD	133.06
927	407743.78	3777268.19	FENCEGRD	133.00
928	407748.33	3777270.06	FENCEGRD	132.92
929	407752.87	3777271.94	FENCEGRD	132.84
930	407759.28	3777278.37	FENCEGRD	131.63
931	407761.14	3777282.93	FENCEGRD	130.56
932	407762.99	3777287.49	FENCEGRD	131.50
933	407764.85	3777292.05	FENCEGRD	133.00
934	407766.70	3777296.60	FENCEGRD	133.65
935	407768.56	3777301.16	FENCEGRD	133.60
936	407770.41	3777305.72	FENCEGRD	133.63
937	407772.27	3777310.28	FENCEGRD	133.83
938	407774.13	3777314.83	FENCEGRD	134.05
939	407775.98	3777319.39	FENCEGRD	134.28
940	407777.84	3777323.95	FENCEGRD	134.50
941	407779.69	3777328.51	FENCEGRD	134.64
942	407781.55	3777333.06	FENCEGRD	134.76

943	407783.41	3777337.62	FENCEGRD	134.85
944	407785.26	3777342.18	FENCEGRD	134.91
945	407787.12	3777346.74	FENCEGRD	134.98
946	407788.97	3777351.29	FENCEGRD	135.05
947	407790.83	3777355.85	FENCEGRD	135.09
948	407792.69	3777360.41	FENCEGRD	135.19
949	407794.54	3777364.97	FENCEGRD	135.27
950	407796.40	3777369.53	FENCEGRD	135.44
951	407798.25	3777374.08	FENCEGRD	135.63
952	407800.11	3777378.64	FENCEGRD	135.81
953	407801.97	3777383.20	FENCEGRD	135.97
954	407803.82	3777387.76	FENCEGRD	136.07
955	407805.68	3777392.31	FENCEGRD	136.13
956	407807.53	3777396.87	FENCEGRD	136.23
957	407809.39	3777401.43	FENCEGRD	136.32
958	407811.24	3777405.99	FENCEGRD	136.42
959	407813.10	3777410.54	FENCEGRD	136.56
960	407814.96	3777415.10	FENCEGRD	136.69
961	407816.81	3777419.66	FENCEGRD	136.82
962	407818.67	3777424.22	FENCEGRD	136.97
963	407820.52	3777428.77	FENCEGRD	137.13
964	407822.38	3777433.33	FENCEGRD	137.28
965	407824.24	3777437.89	FENCEGRD	137.46
966	407826.09	3777442.45	FENCEGRD	137.63
967	407827.95	3777447.00	FENCEGRD	137.76
968	407829.80	3777451.56	FENCEGRD	137.78
969	407831.66	3777456.12	FENCEGRD	137.84
970	407833.52	3777460.68	FENCEGRD	137.98
971	407835.37	3777465.24	FENCEGRD	138.15
972	407837.23	3777469.79	FENCEGRD	138.30
973	407839.08	3777474.35	FENCEGRD	138.45
974	407840.94	3777478.91	FENCEGRD	138.58
975	407842.80	3777483.47	FENCEGRD	138.62
976	407844.65	3777488.02	FENCEGRD	138.66
977	407846.51	3777492.58	FENCEGRD	138.77
978	407848.36	3777497.14	FENCEGRD	138.86
979	407850.22	3777501.70	FENCEGRD	139.01
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981	407520.46	3777178.13	FENCEGRD	129.43
982	407515.50	3777178.16	FENCEGRD	129.39
983	407510.54	3777178.18	FENCEGRD	129.35
984	407505.58	3777178.21	FENCEGRD	129.33
985	407500.62	3777178.23	FENCEGRD	129.34
986	407495.66	3777178.26	FENCEGRD	129.39
987	407490.70	3777178.28	FENCEGRD	129.46
988	407485.74	3777178.31	FENCEGRD	129.59
989	407480.77	3777178.33	FENCEGRD	129.72
990	407475.81	3777178.36	FENCEGRD	129.73
991	407470.85	3777178.38	FENCEGRD	129.73
992	407465.89	3777178.41	FENCEGRD	129.72
993	407460.93	3777178.44	FENCEGRD	129.70
994	407455.97	3777178.46	FENCEGRD	129.67
995	407451.01	3777178.49	FENCEGRD	129.29
996	407446.05	3777178.51	FENCEGRD	128.96
997	407441.09	3777178.54	FENCEGRD	128.94
998	407436.13	3777178.56	FENCEGRD	128.99
999	407431.17	3777178.59	FENCEGRD	129.11
1,000	407426.21	3777178.61	FENCEGRD	129.07
1,001	407421.25	3777178.64	FENCEGRD	128.98
1,002	407416.29	3777178.67	FENCEGRD	128.94
1,003	407411.33	3777178.69	FENCEGRD	128.91
1,004	407406.37	3777178.72	FENCEGRD	128.89
1,005	407401.41	3777178.74	FENCEGRD	128.90
1,006	407396.45	3777178.77	FENCEGRD	128.92
1,007	407391.49	3777178.79	FENCEGRD	128.93
1,008	407386.53	3777178.82	FENCEGRD	128.92
1,009	407381.56	3777178.84	FENCEGRD	128.88
1,010	407376.60	3777178.87	FENCEGRD	128.83
1,011	407371.64	3777178.89	FENCEGRD	128.76
1,012	407366.68	3777178.92	FENCEGRD	128.74
1,013	407361.72	3777178.95	FENCEGRD	128.75
1,014	407356.76	3777178.97	FENCEGRD	128.76
1,015	407351.80	3777179.00	FENCEGRD	128.75
1,016	407346.84	3777179.02	FENCEGRD	128.73
1,017	407341.88	3777179.05	FENCEGRD	128.54
1,018	407336.92	3777179.07	FENCEGRD	128.20

1,019	407331.96	3777179.10	FENCEGRD	128.13
1,020	407327.00	3777179.12	FENCEGRD	128.12
1,021	407529.43	3777079.97	FENCEGRD	127.84
1,022	407533.96	3777081.84	FENCEGRD	127.89
1,023	407538.49	3777083.71	FENCEGRD	127.95
1,024	407543.02	3777085.58	FENCEGRD	128.01
1,025	407547.55	3777087.45	FENCEGRD	128.08
1,026	407552.07	3777089.31	FENCEGRD	128.14
1,027	407556.60	3777091.18	FENCEGRD	128.21
1,028	407561.13	3777093.05	FENCEGRD	128.23
1,029	407565.66	3777094.92	FENCEGRD	128.26
1,030	407570.19	3777096.79	FENCEGRD	128.31
1,031	407574.72	3777098.65	FENCEGRD	128.36
1,032	407579.24	3777100.52	FENCEGRD	128.42
1,033	407583.77	3777102.39	FENCEGRD	128.47
1,034	407588.30	3777104.26	FENCEGRD	128.51
1,035	407592.83	3777106.13	FENCEGRD	128.55
1,036	407597.36	3777107.99	FENCEGRD	128.60
1,037	407601.88	3777109.86	FENCEGRD	128.66
1,038	407606.41	3777111.73	FENCEGRD	128.75
1,039	407610.94	3777113.60	FENCEGRD	128.79
1,040	407615.47	3777115.47	FENCEGRD	128.79
1,041	407620.00	3777117.34	FENCEGRD	128.70
1,042	407624.53	3777119.20	FENCEGRD	128.54
1,043	407629.05	3777121.07	FENCEGRD	128.51
1,044	407633.58	3777122.94	FENCEGRD	128.61
1,045	407638.11	3777124.81	FENCEGRD	128.60
1,046	407642.64	3777126.68	FENCEGRD	128.52
1,047	407647.17	3777128.54	FENCEGRD	128.76
1,048	407651.70	3777130.41	FENCEGRD	128.98
1,049	407656.22	3777132.28	FENCEGRD	129.20
1,050	407660.75	3777134.15	FENCEGRD	129.37
1,051	407665.28	3777136.02	FENCEGRD	129.34
1,052	407669.81	3777137.88	FENCEGRD	129.35
1,053	407674.34	3777139.75	FENCEGRD	129.39
1,054	407678.86	3777141.62	FENCEGRD	129.41
1,055	407683.39	3777143.49	FENCEGRD	129.40
1,056	407687.92	3777145.36	FENCEGRD	129.47

1,057	407692.45	3777147.22	FENCEGRD	129.56
1,058	407696.98	3777149.09	FENCEGRD	129.64
1,059	407701.51	3777150.96	FENCEGRD	129.77
1,060	407706.03	3777152.83	FENCEGRD	129.80
1,061	407710.56	3777154.70	FENCEGRD	129.80
1,062	407715.09	3777156.56	FENCEGRD	129.92
1,063	407719.62	3777158.43	FENCEGRD	130.02
1,064	407724.15	3777160.30	FENCEGRD	130.15
1,065	407728.67	3777162.17	FENCEGRD	130.30
1,066	407733.20	3777164.04	FENCEGRD	130.37
1,067	407737.73	3777165.90	FENCEGRD	130.45
1,068	407742.26	3777167.77	FENCEGRD	130.53
1,069	407746.79	3777169.64	FENCEGRD	130.59
1,070	407751.32	3777171.51	FENCEGRD	130.68
1,071	407755.84	3777173.38	FENCEGRD	130.82
1,072	407760.37	3777175.25	FENCEGRD	130.95
1,073	407764.90	3777177.11	FENCEGRD	131.08
1,074	407769.43	3777178.98	FENCEGRD	131.24
1,075	407773.96	3777180.85	FENCEGRD	131.39
1,076	407778.48	3777182.72	FENCEGRD	131.51
1,077	407783.01	3777184.59	FENCEGRD	131.63
1,078	407787.54	3777186.45	FENCEGRD	131.74
1,079	407792.07	3777188.32	FENCEGRD	131.82
1,080	407796.60	3777190.19	FENCEGRD	131.91
1,081	407801.13	3777192.06	FENCEGRD	131.97
1,082	407805.65	3777193.93	FENCEGRD	132.02
1,083	407810.18	3777195.79	FENCEGRD	132.04
1,084	407814.71	3777197.66	FENCEGRD	132.06
1,085	407819.24	3777199.53	FENCEGRD	132.07
1,086	407823.77	3777201.40	FENCEGRD	132.10
1,087	407830.14	3777207.80	FENCEGRD	132.29
1,088	407831.99	3777212.34	FENCEGRD	132.40
1,089	407833.84	3777216.88	FENCEGRD	132.52
1,090	407835.68	3777221.41	FENCEGRD	132.64
1,091	407837.53	3777225.95	FENCEGRD	132.74
1,092	407839.38	3777230.49	FENCEGRD	132.85
1,093	407841.23	3777235.02	FENCEGRD	132.97
1,094	407843.07	3777239.56	FENCEGRD	133.10

1,095	407844.92	3777244.10	FENCEGRD	133.23
1,096	407846.77	3777248.63	FENCEGRD	133.35
1,097	407848.62	3777253.17	FENCEGRD	133.45
1,098	407850.46	3777257.71	FENCEGRD	133.49
1,099	407852.31	3777262.24	FENCEGRD	133.56
1,100	407854.16	3777266.78	FENCEGRD	133.56
1,101	407856.01	3777271.32	FENCEGRD	133.54
1,102	407857.85	3777275.85	FENCEGRD	133.99
1,103	407859.70	3777280.39	FENCEGRD	134.66
1,104	407861.55	3777284.93	FENCEGRD	135.02
1,105	407863.40	3777289.46	FENCEGRD	134.95
1,106	407865.24	3777294.00	FENCEGRD	134.89
1,107	407867.09	3777298.54	FENCEGRD	134.95
1,108	407868.94	3777303.07	FENCEGRD	135.05
1,109	407870.79	3777307.61	FENCEGRD	135.14
1,110	407872.63	3777312.15	FENCEGRD	135.22
1,111	407874.48	3777316.68	FENCEGRD	135.31
1,112	407876.33	3777321.22	FENCEGRD	135.39
1,113	407878.17	3777325.76	FENCEGRD	135.47
1,114	407880.02	3777330.29	FENCEGRD	135.56
1,115	407881.87	3777334.83	FENCEGRD	135.67
1,116	407883.72	3777339.37	FENCEGRD	135.77
1,117	407885.56	3777343.90	FENCEGRD	135.87
1,118	407887.41	3777348.44	FENCEGRD	135.96
1,119	407889.26	3777352.98	FENCEGRD	136.00
1,120	407891.11	3777357.51	FENCEGRD	136.06
1,121	407892.95	3777362.05	FENCEGRD	136.15
1,122	407894.80	3777366.59	FENCEGRD	136.30
1,123	407896.65	3777371.12	FENCEGRD	136.48
1,124	407898.50	3777375.66	FENCEGRD	136.57
1,125	407900.34	3777380.20	FENCEGRD	136.63
1,126	407902.19	3777384.73	FENCEGRD	136.74
1,127	407904.04	3777389.27	FENCEGRD	136.88
1,128	407905.89	3777393.81	FENCEGRD	137.01
1,129	407907.73	3777398.34	FENCEGRD	137.14
1,130	407909.58	3777402.88	FENCEGRD	137.27
1,131	407911.43	3777407.42	FENCEGRD	137.45
1,132	407913.27	3777411.95	FENCEGRD	137.70

1,133	407915.12	3777416.49	FENCEGRD	137.93
1,134	407916.97	3777421.03	FENCEGRD	138.10
1,135	407918.82	3777425.56	FENCEGRD	138.26
1,136	407920.66	3777430.10	FENCEGRD	138.32
1,137	407922.51	3777434.64	FENCEGRD	138.35
1,138	407924.36	3777439.17	FENCEGRD	138.48
1,139	407926.21	3777443.71	FENCEGRD	138.65
1,140	407928.05	3777448.25	FENCEGRD	138.79
1,141	407929.90	3777452.78	FENCEGRD	138.90
1,142	407931.75	3777457.32	FENCEGRD	139.01
1,143	407933.60	3777461.86	FENCEGRD	139.17
1,144	407935.44	3777466.39	FENCEGRD	139.36
1,145	407937.29	3777470.93	FENCEGRD	139.43
1,146	407939.14	3777475.47	FENCEGRD	139.46
1,147	407940.99	3777480.00	FENCEGRD	139.51
1,148	407942.83	3777484.54	FENCEGRD	139.58
1,149	407944.68	3777489.08	FENCEGRD	139.64
1,150	407946.53	3777493.61	FENCEGRD	139.73
1,151	407948.38	3777498.15	FENCEGRD	139.85
1,152	407950.22	3777502.69	FENCEGRD	140.25
1,153	407524.91	3777078.11	FENCEGRD	127.81
1,154	407519.94	3777078.13	FENCEGRD	127.78
1,155	407514.98	3777078.16	FENCEGRD	127.76
1,156	407510.02	3777078.18	FENCEGRD	127.74
1,157	407505.06	3777078.21	FENCEGRD	127.72
1,158	407500.10	3777078.23	FENCEGRD	127.69
1,159	407495.14	3777078.26	FENCEGRD	127.66
1,160	407490.18	3777078.28	FENCEGRD	127.64
1,161	407485.22	3777078.31	FENCEGRD	127.62
1,162	407480.26	3777078.34	FENCEGRD	127.60
1,163	407475.30	3777078.36	FENCEGRD	127.60
1,164	407470.34	3777078.39	FENCEGRD	127.60
1,165	407465.38	3777078.41	FENCEGRD	127.56
1,166	407460.42	3777078.44	FENCEGRD	127.55
1,167	407455.46	3777078.46	FENCEGRD	127.56
1,168	407450.50	3777078.49	FENCEGRD	127.36
1,169	407445.54	3777078.51	FENCEGRD	127.14
1,170	407440.58	3777078.54	FENCEGRD	127.13

1,171	407435.62	3777078.56	FENCEGRD	127.14
1,172	407430.66	3777078.59	FENCEGRD	127.20
1,173	407425.70	3777078.62	FENCEGRD	127.24
1,174	407420.73	3777078.64	FENCEGRD	127.28
1,175	407415.77	3777078.67	FENCEGRD	127.26
1,176	407410.81	3777078.69	FENCEGRD	127.24
1,177	407405.85	3777078.72	FENCEGRD	127.23
1,178	407400.89	3777078.74	FENCEGRD	127.23
1,179	407395.93	3777078.77	FENCEGRD	127.22
1,180	407390.97	3777078.79	FENCEGRD	127.23
1,181	407386.01	3777078.82	FENCEGRD	127.26
1,182	407381.05	3777078.85	FENCEGRD	127.26
1,183	407376.09	3777078.87	FENCEGRD	127.26
1,184	407371.13	3777078.90	FENCEGRD	127.26
1,185	407366.17	3777078.92	FENCEGRD	127.22
1,186	407361.21	3777078.95	FENCEGRD	127.17
1,187	407356.25	3777078.97	FENCEGRD	127.11
1,188	407351.29	3777079.00	FENCEGRD	127.06
1,189	407346.33	3777079.02	FENCEGRD	127.06
1,190	407341.37	3777079.05	FENCEGRD	127.18
1,191	407336.41	3777079.07	FENCEGRD	127.45
1,192	407331.45	3777079.10	FENCEGRD	127.52
1,193	407326.49	3777079.13	FENCEGRD	127.51
1,194	407323.67	3777504.05	FENCEGRD	134.01
1,195	407323.60	3777508.79	FENCEGRD	134.10
1,196	407323.53	3777513.53	FENCEGRD	134.19
1,197	407323.47	3777518.27	FENCEGRD	134.27
1,198	407323.40	3777523.01	FENCEGRD	134.35
1,199	407323.33	3777527.75	FENCEGRD	134.43
1,200	407323.26	3777532.49	FENCEGRD	134.52
1,201	407323.19	3777537.23	FENCEGRD	134.61
1,202	407323.12	3777541.97	FENCEGRD	134.71
1,203	407323.05	3777546.71	FENCEGRD	134.79
1,204	407322.99	3777551.45	FENCEGRD	134.88
1,205	407322.92	3777556.19	FENCEGRD	134.95
1,206	407322.85	3777560.93	FENCEGRD	135.03
1,207	407322.78	3777565.67	FENCEGRD	135.11
1,208	407320.15	3777500.50	FENCEGRD	133.97

1,209	407318.60	3777508.72	FENCEGRD	134.12
1,210	407318.53	3777513.46	FENCEGRD	134.21
1,211	407318.47	3777518.20	FENCEGRD	134.28
1,212	407318.40	3777522.94	FENCEGRD	134.35
1,213	407318.33	3777527.68	FENCEGRD	134.43
1,214	407318.26	3777532.42	FENCEGRD	134.50
1,215	407318.19	3777537.16	FENCEGRD	134.58
1,216	407318.12	3777541.90	FENCEGRD	134.67
1,217	407318.05	3777546.64	FENCEGRD	134.75
1,218	407317.99	3777551.38	FENCEGRD	134.81
1,219	407317.92	3777556.12	FENCEGRD	134.89
1,220	407317.85	3777560.86	FENCEGRD	135.00
1,221	407317.78	3777565.60	FENCEGRD	135.12
1,222	407315.15	3777500.42	FENCEGRD	133.91
1,223	407321.61	3777492.02	FENCEGRD	133.81
1,224	407313.60	3777508.64	FENCEGRD	134.10
1,225	407313.53	3777513.38	FENCEGRD	134.20
1,226	407313.47	3777518.12	FENCEGRD	134.27
1,227	407313.40	3777522.86	FENCEGRD	134.33
1,228	407313.33	3777527.60	FENCEGRD	134.39
1,229	407313.26	3777532.34	FENCEGRD	134.46
1,230	407313.19	3777537.08	FENCEGRD	134.53
1,231	407313.12	3777541.82	FENCEGRD	134.62
1,232	407313.06	3777546.56	FENCEGRD	134.70
1,233	407312.99	3777551.30	FENCEGRD	134.74
1,234	407312.92	3777556.04	FENCEGRD	134.80
1,235	407312.85	3777560.78	FENCEGRD	134.95
1,236	407312.78	3777565.52	FENCEGRD	135.09
1,237	407310.15	3777500.35	FENCEGRD	133.90
1,238	407313.11	3777493.39	FENCEGRD	133.70
1,239	407318.09	3777488.46	FENCEGRD	133.68
1,240	407308.60	3777508.57	FENCEGRD	134.07
1,241	407308.54	3777513.31	FENCEGRD	134.15
1,242	407308.47	3777518.05	FENCEGRD	134.21
1,243	407308.40	3777522.79	FENCEGRD	134.26
1,244	407308.33	3777527.53	FENCEGRD	134.32
1,245	407308.26	3777532.27	FENCEGRD	134.40
1,246	407308.19	3777537.01	FENCEGRD	134.48

1,247	407308.12	3777541.75	FENCEGRD	134.58
1,248	407308.06	3777546.49	FENCEGRD	134.65
1,249	407307.99	3777551.23	FENCEGRD	134.65
1,250	407307.92	3777555.97	FENCEGRD	134.67
1,251	407307.85	3777560.71	FENCEGRD	134.83
1,252	407307.78	3777565.45	FENCEGRD	134.98
1,253	407305.52	3777499.41	FENCEGRD	133.91
1,254	407307.37	3777495.06	FENCEGRD	133.81
1,255	407309.22	3777490.71	FENCEGRD	133.70
1,256	407315.44	3777484.55	FENCEGRD	133.57
1,257	407319.81	3777482.74	FENCEGRD	133.59
1,258	407324.17	3777480.93	FENCEGRD	133.56
1,259	407303.67	3777503.76	FENCEGRD	133.96
1,260	407303.60	3777508.50	FENCEGRD	134.03
1,261	407303.54	3777513.24	FENCEGRD	134.10
1,262	407303.47	3777517.98	FENCEGRD	134.15
1,263	407303.40	3777522.72	FENCEGRD	134.20
1,264	407303.33	3777527.46	FENCEGRD	134.26
1,265	407303.26	3777532.20	FENCEGRD	134.33
1,266	407303.19	3777536.94	FENCEGRD	134.42
1,267	407303.12	3777541.68	FENCEGRD	134.53
1,268	407303.06	3777546.42	FENCEGRD	134.61
1,269	407302.99	3777551.16	FENCEGRD	134.60
1,270	407302.92	3777555.90	FENCEGRD	134.61
1,271	407302.85	3777560.64	FENCEGRD	134.75
1,272	407302.78	3777565.38	FENCEGRD	134.89
1,273	407205.53	3777497.97	FENCEGRD	132.69
1,274	407207.38	3777493.62	FENCEGRD	132.61
1,275	407209.23	3777489.27	FENCEGRD	132.58
1,276	407211.09	3777484.92	FENCEGRD	132.55
1,277	407212.94	3777480.57	FENCEGRD	132.52
1,278	407214.79	3777476.22	FENCEGRD	132.51
1,279	407216.64	3777471.87	FENCEGRD	132.72
1,280	407218.49	3777467.52	FENCEGRD	133.12
1,281	407220.34	3777463.17	FENCEGRD	133.32
1,282	407222.19	3777458.82	FENCEGRD	132.83
1,283	407224.04	3777454.47	FENCEGRD	132.61
1,284	407225.89	3777450.12	FENCEGRD	131.88

1,285	407227.74	3777445.77	FENCEGRD	130.68
1,286	407229.59	3777441.42	FENCEGRD	129.92
1,287	407231.44	3777437.07	FENCEGRD	129.97
1,288	407233.29	3777432.72	FENCEGRD	130.00
1,289	407235.14	3777428.37	FENCEGRD	129.98
1,290	407236.99	3777424.02	FENCEGRD	130.08
1,291	407238.84	3777419.67	FENCEGRD	130.31
1,292	407245.06	3777413.51	FENCEGRD	131.04
1,293	407249.43	3777411.70	FENCEGRD	131.24
1,294	407253.79	3777409.89	FENCEGRD	131.42
1,295	407258.16	3777408.08	FENCEGRD	131.47
1,296	407262.53	3777406.27	FENCEGRD	131.48
1,297	407266.89	3777404.46	FENCEGRD	131.45
1,298	407271.26	3777402.65	FENCEGRD	131.45
1,299	407275.63	3777400.84	FENCEGRD	131.45
1,300	407279.99	3777399.03	FENCEGRD	131.43
1,301	407284.36	3777397.22	FENCEGRD	131.44
1,302	407288.73	3777395.41	FENCEGRD	131.45
1,303	407293.09	3777393.60	FENCEGRD	131.49
1,304	407297.46	3777391.79	FENCEGRD	131.56
1,305	407301.83	3777389.98	FENCEGRD	131.66
1,306	407306.19	3777388.17	FENCEGRD	131.76
1,307	407310.56	3777386.36	FENCEGRD	131.88
1,308	407314.93	3777384.55	FENCEGRD	131.98
1,309	407319.29	3777382.74	FENCEGRD	132.06
1,310	407323.66	3777380.93	FENCEGRD	132.04
1,311	407203.68	3777502.31	FENCEGRD	132.74
1,312	407203.61	3777507.05	FENCEGRD	132.81
1,313	407203.55	3777511.79	FENCEGRD	132.88
1,314	407203.48	3777516.53	FENCEGRD	132.95
1,315	407203.41	3777521.27	FENCEGRD	133.05
1,316	407203.34	3777526.01	FENCEGRD	133.16
1,317	407203.27	3777530.75	FENCEGRD	133.38
1,318	407203.20	3777535.49	FENCEGRD	133.60
1,319	407203.14	3777540.23	FENCEGRD	133.64
1,320	407203.07	3777544.97	FENCEGRD	133.67
1,321	407203.00	3777549.71	FENCEGRD	133.78
1,322	407202.93	3777554.45	FENCEGRD	133.91

1,323	407202.86	3777559.19	FENCEGRD	134.01
1,324	407202.79	3777563.93	FENCEGRD	134.09
1,325	407105.54	3777496.52	FENCEGRD	133.64
1,326	407107.39	3777492.17	FENCEGRD	132.95
1,327	407109.25	3777487.82	FENCEGRD	131.96
1,328	407111.10	3777483.47	FENCEGRD	131.39
1,329	407112.95	3777479.12	FENCEGRD	131.36
1,330	407114.80	3777474.77	FENCEGRD	131.35
1,331	407116.65	3777470.42	FENCEGRD	131.32
1,332	407118.50	3777466.07	FENCEGRD	131.27
1,333	407120.35	3777461.72	FENCEGRD	131.25
1,334	407122.20	3777457.37	FENCEGRD	131.24
1,335	407124.05	3777453.02	FENCEGRD	131.22
1,336	407125.90	3777448.67	FENCEGRD	131.19
1,337	407127.75	3777444.32	FENCEGRD	131.18
1,338	407129.60	3777439.98	FENCEGRD	131.19
1,339	407131.45	3777435.63	FENCEGRD	131.20
1,340	407133.30	3777431.28	FENCEGRD	131.20
1,341	407135.15	3777426.93	FENCEGRD	131.14
1,342	407137.00	3777422.58	FENCEGRD	131.09
1,343	407138.85	3777418.23	FENCEGRD	131.06
1,344	407140.70	3777413.88	FENCEGRD	131.01
1,345	407142.55	3777409.53	FENCEGRD	131.03
1,346	407144.41	3777405.18	FENCEGRD	131.06
1,347	407146.26	3777400.83	FENCEGRD	131.00
1,348	407148.11	3777396.48	FENCEGRD	130.90
1,349	407149.96	3777392.13	FENCEGRD	130.79
1,350	407151.81	3777387.78	FENCEGRD	130.77
1,351	407153.66	3777383.43	FENCEGRD	130.73
1,352	407155.51	3777379.08	FENCEGRD	130.67
1,353	407157.36	3777374.73	FENCEGRD	130.58
1,354	407159.21	3777370.38	FENCEGRD	130.49
1,355	407161.06	3777366.03	FENCEGRD	130.43
1,356	407162.91	3777361.68	FENCEGRD	130.40
1,357	407164.76	3777357.33	FENCEGRD	130.39
1,358	407166.61	3777352.98	FENCEGRD	130.36
1,359	407168.46	3777348.63	FENCEGRD	130.27
1,360	407174.68	3777342.47	FENCEGRD	130.10

1,361	407179.05	3777340.66	FENCEGRD	130.11
1,362	407183.41	3777338.85	FENCEGRD	130.14
1,363	407187.78	3777337.04	FENCEGRD	130.08
1,364	407192.15	3777335.23	FENCEGRD	130.03
1,365	407196.51	3777333.42	FENCEGRD	130.05
1,366	407200.88	3777331.61	FENCEGRD	130.05
1,367	407205.25	3777329.80	FENCEGRD	130.09
1,368	407209.61	3777327.99	FENCEGRD	130.08
1,369	407213.98	3777326.18	FENCEGRD	130.08
1,370	407218.35	3777324.37	FENCEGRD	130.06
1,371	407222.71	3777322.56	FENCEGRD	129.95
1,372	407227.08	3777320.75	FENCEGRD	129.83
1,373	407231.45	3777318.94	FENCEGRD	129.79
1,374	407235.81	3777317.13	FENCEGRD	129.68
1,375	407240.18	3777315.32	FENCEGRD	129.27
1,376	407244.55	3777313.51	FENCEGRD	129.06
1,377	407248.91	3777311.70	FENCEGRD	128.52
1,378	407253.28	3777309.89	FENCEGRD	128.12
1,379	407257.65	3777308.08	FENCEGRD	128.74
1,380	407262.01	3777306.27	FENCEGRD	129.27
1,381	407266.38	3777304.46	FENCEGRD	129.63
1,382	407270.75	3777302.65	FENCEGRD	129.90
1,383	407275.11	3777300.84	FENCEGRD	130.03
1,384	407279.48	3777299.03	FENCEGRD	130.13
1,385	407283.85	3777297.22	FENCEGRD	130.12
1,386	407288.21	3777295.41	FENCEGRD	130.11
1,387	407292.58	3777293.60	FENCEGRD	130.07
1,388	407296.95	3777291.79	FENCEGRD	130.06
1,389	407301.31	3777289.98	FENCEGRD	130.08
1,390	407305.68	3777288.17	FENCEGRD	130.09
1,391	407310.05	3777286.36	FENCEGRD	130.09
1,392	407314.41	3777284.55	FENCEGRD	130.01
1,393	407318.78	3777282.74	FENCEGRD	129.95
1,394	407323.15	3777280.93	FENCEGRD	129.98
1,395	407103.69	3777500.87	FENCEGRD	133.49
1,396	407103.63	3777505.61	FENCEGRD	133.41
1,397	407103.56	3777510.35	FENCEGRD	133.03
1,398	407103.49	3777515.09	FENCEGRD	132.60

1,399	407103.42	3777519.83	FENCEGRD	132.64
1,400	407103.35	3777524.57	FENCEGRD	132.84
1,401	407103.28	3777529.31	FENCEGRD	132.97
1,402	407103.21	3777534.05	FENCEGRD	133.04
1,403	407103.15	3777538.79	FENCEGRD	133.11
1,404	407103.08	3777543.53	FENCEGRD	133.15
1,405	407103.01	3777548.27	FENCEGRD	133.20
1,406	407102.94	3777553.01	FENCEGRD	133.28
1,407	407102.87	3777557.75	FENCEGRD	133.35
1,408	407102.80	3777562.49	FENCEGRD	133.41
1,409	407005.55	3777495.08	FENCEGRD	132.69
1,410	407007.40	3777490.73	FENCEGRD	132.46
1,411	407009.26	3777486.38	FENCEGRD	132.27
1,412	407011.11	3777482.03	FENCEGRD	131.98
1,413	407012.96	3777477.68	FENCEGRD	131.83
1,414	407014.81	3777473.33	FENCEGRD	131.87
1,415	407016.66	3777468.98	FENCEGRD	131.94
1,416	407018.51	3777464.63	FENCEGRD	132.00
1,417	407020.36	3777460.28	FENCEGRD	132.04
1,418	407022.21	3777455.93	FENCEGRD	132.08
1,419	407024.06	3777451.58	FENCEGRD	131.90
1,420	407025.91	3777447.23	FENCEGRD	131.70
1,421	407027.76	3777442.88	FENCEGRD	131.61
1,422	407029.61	3777438.53	FENCEGRD	131.62
1,423	407031.46	3777434.18	FENCEGRD	131.62
1,424	407033.31	3777429.83	FENCEGRD	131.58
1,425	407035.16	3777425.48	FENCEGRD	131.55
1,426	407037.01	3777421.13	FENCEGRD	131.59
1,427	407038.86	3777416.78	FENCEGRD	131.71
1,428	407040.71	3777412.43	FENCEGRD	131.53
1,429	407042.57	3777408.08	FENCEGRD	131.12
1,430	407044.42	3777403.73	FENCEGRD	130.71
1,431	407046.27	3777399.38	FENCEGRD	130.30
1,432	407048.12	3777395.03	FENCEGRD	129.94
1,433	407049.97	3777390.68	FENCEGRD	129.90
1,434	407051.82	3777386.34	FENCEGRD	129.79
1,435	407053.67	3777381.99	FENCEGRD	129.77
1,436	407055.52	3777377.64	FENCEGRD	130.07

1,437	407057.37	3777373.29	FENCEGRD	130.48
1,438	407059.22	3777368.94	FENCEGRD	130.85
1,439	407061.07	3777364.59	FENCEGRD	131.03
1,440	407062.92	3777360.24	FENCEGRD	130.93
1,441	407064.77	3777355.89	FENCEGRD	130.79
1,442	407066.62	3777351.54	FENCEGRD	130.71
1,443	407068.47	3777347.19	FENCEGRD	130.68
1,444	407070.32	3777342.84	FENCEGRD	130.67
1,445	407072.17	3777338.49	FENCEGRD	130.69
1,446	407074.02	3777334.14	FENCEGRD	130.71
1,447	407075.87	3777329.79	FENCEGRD	130.73
1,448	407077.73	3777325.44	FENCEGRD	130.71
1,449	407079.58	3777321.09	FENCEGRD	130.66
1,450	407081.43	3777316.74	FENCEGRD	130.64
1,451	407083.28	3777312.39	FENCEGRD	130.61
1,452	407085.13	3777308.04	FENCEGRD	130.59
1,453	407086.98	3777303.69	FENCEGRD	130.57
1,454	407088.83	3777299.34	FENCEGRD	130.56
1,455	407090.68	3777294.99	FENCEGRD	130.55
1,456	407092.53	3777290.64	FENCEGRD	130.52
1,457	407094.38	3777286.29	FENCEGRD	130.18
1,458	407096.23	3777281.94	FENCEGRD	129.83
1,459	407098.08	3777277.59	FENCEGRD	129.70
1,460	407104.30	3777271.43	FENCEGRD	129.70
1,461	407108.66	3777269.62	FENCEGRD	129.68
1,462	407113.03	3777267.81	FENCEGRD	129.66
1,463	407117.40	3777266.00	FENCEGRD	129.63
1,464	407121.77	3777264.19	FENCEGRD	129.60
1,465	407126.13	3777262.38	FENCEGRD	129.58
1,466	407130.50	3777260.57	FENCEGRD	129.58
1,467	407134.87	3777258.76	FENCEGRD	129.56
1,468	407139.23	3777256.95	FENCEGRD	129.44
1,469	407143.60	3777255.14	FENCEGRD	129.24
1,470	407147.97	3777253.33	FENCEGRD	128.98
1,471	407152.33	3777251.52	FENCEGRD	128.97
1,472	407156.70	3777249.71	FENCEGRD	129.16
1,473	407161.07	3777247.90	FENCEGRD	129.06
1,474	407165.43	3777246.09	FENCEGRD	128.79

1,475	407169.80	3777244.28	FENCEGRD	128.34
1,476	407174.17	3777242.47	FENCEGRD	127.94
1,477	407178.53	3777240.66	FENCEGRD	127.72
1,478	407182.90	3777238.85	FENCEGRD	127.53
1,479	407187.27	3777237.04	FENCEGRD	128.08
1,480	407191.63	3777235.23	FENCEGRD	128.58
1,481	407196.00	3777233.42	FENCEGRD	128.57
1,482	407200.37	3777231.61	FENCEGRD	128.54
1,483	407204.73	3777229.80	FENCEGRD	128.44
1,484	407209.10	3777227.99	FENCEGRD	128.33
1,485	407213.47	3777226.18	FENCEGRD	128.30
1,486	407217.83	3777224.37	FENCEGRD	128.31
1,487	407222.20	3777222.56	FENCEGRD	128.28
1,488	407226.57	3777220.75	FENCEGRD	128.24
1,489	407230.93	3777218.94	FENCEGRD	128.25
1,490	407235.30	3777217.13	FENCEGRD	128.27
1,491	407239.67	3777215.32	FENCEGRD	128.30
1,492	407244.03	3777213.51	FENCEGRD	128.31
1,493	407248.40	3777211.70	FENCEGRD	128.29
1,494	407252.77	3777209.89	FENCEGRD	128.28
1,495	407257.13	3777208.08	FENCEGRD	128.26
1,496	407261.50	3777206.27	FENCEGRD	128.27
1,497	407265.87	3777204.46	FENCEGRD	128.32
1,498	407270.23	3777202.65	FENCEGRD	128.38
1,499	407274.60	3777200.84	FENCEGRD	128.42
1,500	407278.97	3777199.03	FENCEGRD	128.46
1,501	407283.33	3777197.22	FENCEGRD	128.48
1,502	407287.70	3777195.41	FENCEGRD	128.46
1,503	407292.07	3777193.60	FENCEGRD	128.38
1,504	407296.43	3777191.79	FENCEGRD	128.20
1,505	407300.80	3777189.98	FENCEGRD	128.05
1,506	407305.17	3777188.17	FENCEGRD	128.03
1,507	407309.53	3777186.36	FENCEGRD	128.01
1,508	407313.90	3777184.55	FENCEGRD	128.01
1,509	407318.27	3777182.74	FENCEGRD	128.05
1,510	407322.63	3777180.93	FENCEGRD	128.08
1,511	407003.70	3777499.43	FENCEGRD	132.97
1,512	407003.64	3777504.17	FENCEGRD	132.94

1,513	407003.57	3777508.91	FENCEGRD	132.71
1,514	407003.50	3777513.65	FENCEGRD	132.16
1,515	407003.43	3777518.39	FENCEGRD	131.86
1,516	407003.36	3777523.13	FENCEGRD	132.39
1,517	407003.29	3777527.87	FENCEGRD	132.92
1,518	407003.22	3777532.61	FENCEGRD	133.55
1,519	407003.16	3777537.35	FENCEGRD	134.19
1,520	407003.09	3777542.09	FENCEGRD	133.47
1,521	407003.02	3777546.83	FENCEGRD	132.60
1,522	407002.95	3777551.57	FENCEGRD	132.33
1,523	407002.88	3777556.31	FENCEGRD	132.27
1,524	407002.81	3777561.05	FENCEGRD	132.25
1,525	406905.56	3777493.63	FENCEGRD	133.09
1,526	406907.42	3777489.28	FENCEGRD	132.99
1,527	406909.27	3777484.93	FENCEGRD	132.88
1,528	406911.12	3777480.58	FENCEGRD	132.78
1,529	406912.97	3777476.23	FENCEGRD	132.70
1,530	406914.82	3777471.88	FENCEGRD	132.64
1,531	406916.67	3777467.53	FENCEGRD	132.59
1,532	406918.52	3777463.18	FENCEGRD	132.54
1,533	406920.37	3777458.84	FENCEGRD	132.50
1,534	406922.22	3777454.49	FENCEGRD	132.40
1,535	406924.07	3777450.14	FENCEGRD	132.30
1,536	406925.92	3777445.79	FENCEGRD	132.21
1,537	406927.77	3777441.44	FENCEGRD	132.11
1,538	406929.62	3777437.09	FENCEGRD	132.06
1,539	406931.47	3777432.74	FENCEGRD	132.06
1,540	406933.32	3777428.39	FENCEGRD	132.08
1,541	406935.17	3777424.04	FENCEGRD	132.11
1,542	406937.02	3777419.69	FENCEGRD	132.16
1,543	406938.87	3777415.34	FENCEGRD	132.16
1,544	406940.72	3777410.99	FENCEGRD	132.10
1,545	406942.58	3777406.64	FENCEGRD	132.02
1,546	406944.43	3777402.29	FENCEGRD	131.93
1,547	406946.28	3777397.94	FENCEGRD	131.87
1,548	406948.13	3777393.59	FENCEGRD	131.79
1,549	406949.98	3777389.24	FENCEGRD	131.74
1,550	406951.83	3777384.89	FENCEGRD	131.71

1,551	406953.68	3777380.54	FENCEGRD	131.72
1,552	406955.53	3777376.19	FENCEGRD	131.74
1,553	406957.38	3777371.84	FENCEGRD	131.70
1,554	406959.23	3777367.49	FENCEGRD	131.61
1,555	406961.08	3777363.14	FENCEGRD	131.54
1,556	406962.93	3777358.79	FENCEGRD	131.49
1,557	406964.78	3777354.44	FENCEGRD	131.43
1,558	406966.63	3777350.09	FENCEGRD	131.33
1,559	406968.48	3777345.74	FENCEGRD	131.20
1,560	406970.33	3777341.39	FENCEGRD	131.08
1,561	406972.18	3777337.04	FENCEGRD	130.99
1,562	406974.03	3777332.70	FENCEGRD	130.90
1,563	406975.89	3777328.35	FENCEGRD	130.84
1,564	406977.74	3777324.00	FENCEGRD	130.78
1,565	406979.59	3777319.65	FENCEGRD	130.70
1,566	406981.44	3777315.30	FENCEGRD	130.63
1,567	406983.29	3777310.95	FENCEGRD	130.56
1,568	406985.14	3777306.60	FENCEGRD	130.51
1,569	406986.99	3777302.25	FENCEGRD	130.47
1,570	406988.84	3777297.90	FENCEGRD	130.46
1,571	406990.69	3777293.55	FENCEGRD	130.42
1,572	406992.54	3777289.20	FENCEGRD	130.32
1,573	406994.39	3777284.85	FENCEGRD	130.17
1,574	406996.24	3777280.50	FENCEGRD	130.06
1,575	406998.09	3777276.15	FENCEGRD	130.11
1,576	406999.94	3777271.80	FENCEGRD	130.15
1,577	407001.79	3777267.45	FENCEGRD	130.08
1,578	407003.64	3777263.10	FENCEGRD	129.98
1,579	407005.49	3777258.75	FENCEGRD	129.90
1,580	407007.34	3777254.40	FENCEGRD	129.86
1,581	407009.19	3777250.05	FENCEGRD	129.83
1,582	407011.05	3777245.70	FENCEGRD	129.83
1,583	407012.90	3777241.35	FENCEGRD	129.76
1,584	407014.75	3777237.00	FENCEGRD	129.76
1,585	407016.60	3777232.65	FENCEGRD	129.74
1,586	407018.45	3777228.30	FENCEGRD	129.70
1,587	407020.30	3777223.95	FENCEGRD	129.65
1,588	407022.15	3777219.60	FENCEGRD	129.61

1,589	407024.00	3777215.25	FENCEGRD	129.61
1,590	407025.85	3777210.90	FENCEGRD	129.62
1,591	407027.70	3777206.55	FENCEGRD	129.60
1,592	407033.92	3777200.40	FENCEGRD	129.55
1,593	407038.28	3777198.59	FENCEGRD	129.53
1,594	407042.65	3777196.78	FENCEGRD	129.53
1,595	407047.02	3777194.97	FENCEGRD	129.53
1,596	407051.38	3777193.16	FENCEGRD	129.49
1,597	407055.75	3777191.35	FENCEGRD	129.40
1,598	407060.12	3777189.54	FENCEGRD	129.27
1,599	407064.48	3777187.73	FENCEGRD	129.20
1,600	407068.85	3777185.92	FENCEGRD	129.23
1,601	407073.22	3777184.11	FENCEGRD	129.25
1,602	407077.58	3777182.30	FENCEGRD	129.29
1,603	407081.95	3777180.49	FENCEGRD	129.32
1,604	407086.32	3777178.68	FENCEGRD	129.30
1,605	407090.68	3777176.87	FENCEGRD	129.27
1,606	407095.05	3777175.06	FENCEGRD	129.24
1,607	407099.42	3777173.25	FENCEGRD	129.18
1,608	407103.78	3777171.44	FENCEGRD	129.11
1,609	407108.15	3777169.63	FENCEGRD	129.08
1,610	407112.52	3777167.82	FENCEGRD	129.06
1,611	407116.88	3777166.01	FENCEGRD	129.07
1,612	407121.25	3777164.20	FENCEGRD	129.05
1,613	407125.62	3777162.39	FENCEGRD	128.93
1,614	407129.98	3777160.58	FENCEGRD	128.75
1,615	407134.35	3777158.77	FENCEGRD	128.66
1,616	407138.72	3777156.96	FENCEGRD	128.59
1,617	407143.08	3777155.15	FENCEGRD	128.48
1,618	407147.45	3777153.34	FENCEGRD	128.39
1,619	407151.82	3777151.53	FENCEGRD	128.23
1,620	407156.18	3777149.72	FENCEGRD	128.04
1,621	407160.55	3777147.91	FENCEGRD	127.89
1,622	407164.92	3777146.10	FENCEGRD	127.74
1,623	407169.28	3777144.29	FENCEGRD	127.73
1,624	407173.65	3777142.48	FENCEGRD	127.73
1,625	407178.02	3777140.67	FENCEGRD	127.96
1,626	407182.38	3777138.86	FENCEGRD	128.19

1,627	407186.75	3777137.05	FENCEGRD	128.26
1,628	407191.12	3777135.24	FENCEGRD	128.30
1,629	407195.48	3777133.43	FENCEGRD	128.28
1,630	407199.85	3777131.62	FENCEGRD	128.26
1,631	407204.22	3777129.81	FENCEGRD	128.23
1,632	407208.58	3777128.00	FENCEGRD	128.19
1,633	407212.95	3777126.19	FENCEGRD	128.08
1,634	407217.32	3777124.38	FENCEGRD	128.01
1,635	407221.68	3777122.57	FENCEGRD	128.03
1,636	407226.05	3777120.76	FENCEGRD	128.05
1,637	407230.42	3777118.95	FENCEGRD	128.03
1,638	407234.78	3777117.14	FENCEGRD	127.89
1,639	407239.15	3777115.33	FENCEGRD	127.81
1,640	407243.52	3777113.52	FENCEGRD	127.05
1,641	407247.88	3777111.71	FENCEGRD	125.51
1,642	407252.25	3777109.90	FENCEGRD	124.89
1,643	407256.62	3777108.09	FENCEGRD	124.21
1,644	407260.98	3777106.28	FENCEGRD	124.49
1,645	407265.35	3777104.47	FENCEGRD	126.31
1,646	407269.72	3777102.66	FENCEGRD	127.09
1,647	407274.09	3777100.85	FENCEGRD	127.33
1,648	407278.45	3777099.04	FENCEGRD	127.43
1,649	407282.82	3777097.23	FENCEGRD	127.39
1,650	407287.19	3777095.42	FENCEGRD	127.51
1,651	407291.55	3777093.61	FENCEGRD	127.62
1,652	407295.92	3777091.80	FENCEGRD	127.64
1,653	407300.29	3777089.99	FENCEGRD	127.66
1,654	407304.65	3777088.18	FENCEGRD	127.60
1,655	407309.02	3777086.37	FENCEGRD	127.56
1,656	407313.39	3777084.56	FENCEGRD	127.55
1,657	407317.75	3777082.75	FENCEGRD	127.52
1,658	407322.12	3777080.94	FENCEGRD	127.51
1,659	406903.71	3777497.98	FENCEGRD	133.17
1,660	406903.65	3777502.72	FENCEGRD	133.20
1,661	406903.58	3777507.46	FENCEGRD	133.23
1,662	406903.51	3777512.20	FENCEGRD	133.29
1,663	406903.44	3777516.94	FENCEGRD	133.36
1,664	406903.37	3777521.68	FENCEGRD	133.39

1,665	406903.30	3777526.42	FENCEGRD	133.40
1,666	406903.24	3777531.16	FENCEGRD	133.48
1,667	406903.17	3777535.90	FENCEGRD	133.60
1,668	406903.10	3777540.64	FENCEGRD	133.70
1,669	406903.03	3777545.38	FENCEGRD	133.76
1,670	406902.96	3777550.12	FENCEGRD	133.84
1,671	406902.89	3777554.86	FENCEGRD	134.00
1,672	406902.82	3777559.60	FENCEGRD	134.18
1,673	407327.75	3777570.74	FENCEGRD	135.05
1,674	407332.72	3777570.77	FENCEGRD	134.98
1,675	407337.68	3777570.80	FENCEGRD	135.09
1,676	407342.65	3777570.83	FENCEGRD	135.17
1,677	407347.62	3777570.86	FENCEGRD	135.21
1,678	407352.58	3777570.90	FENCEGRD	135.24
1,679	407357.55	3777570.93	FENCEGRD	135.27
1,680	407362.52	3777570.96	FENCEGRD	135.32
1,681	407367.49	3777570.99	FENCEGRD	135.36
1,682	407372.45	3777571.02	FENCEGRD	135.39
1,683	407377.42	3777571.05	FENCEGRD	135.45
1,684	407382.39	3777571.08	FENCEGRD	135.52
1,685	407387.36	3777571.11	FENCEGRD	135.60
1,686	407392.32	3777571.15	FENCEGRD	135.67
1,687	407397.29	3777571.18	FENCEGRD	135.73
1,688	407402.26	3777571.21	FENCEGRD	135.78
1,689	407407.22	3777571.24	FENCEGRD	135.82
1,690	407412.19	3777571.27	FENCEGRD	135.91
1,691	407417.16	3777571.30	FENCEGRD	136.00
1,692	407422.13	3777571.33	FENCEGRD	136.10
1,693	407427.09	3777571.36	FENCEGRD	136.19
1,694	407432.06	3777571.40	FENCEGRD	136.27
1,695	407437.03	3777571.43	FENCEGRD	136.36
1,696	407442.00	3777571.46	FENCEGRD	136.44
1,697	407446.96	3777571.49	FENCEGRD	136.53
1,698	407451.93	3777571.52	FENCEGRD	136.61
1,699	407456.90	3777571.55	FENCEGRD	136.72
1,700	407461.86	3777571.58	FENCEGRD	136.81
1,701	407466.83	3777571.61	FENCEGRD	136.86
1,702	407471.80	3777571.65	FENCEGRD	136.93

1,703	407476.77	3777571.68	FENCEGRD	137.01
1,704	407481.73	3777571.71	FENCEGRD	137.11
1,705	407486.70	3777571.74	FENCEGRD	137.20
1,706	407491.67	3777571.77	FENCEGRD	137.26
1,707	407496.64	3777571.80	FENCEGRD	137.34
1,708	407501.60	3777571.83	FENCEGRD	137.43
1,709	407506.57	3777571.86	FENCEGRD	137.49
1,710	407511.54	3777571.90	FENCEGRD	137.54
1,711	407516.50	3777571.93	FENCEGRD	137.60
1,712	407521.47	3777571.96	FENCEGRD	137.65
1,713	407526.44	3777571.99	FENCEGRD	137.71
1,714	407324.18	3777574.24	FENCEGRD	135.22
1,715	407332.68	3777575.77	FENCEGRD	135.07
1,716	407337.65	3777575.80	FENCEGRD	135.12
1,717	407342.62	3777575.83	FENCEGRD	135.16
1,718	407347.59	3777575.86	FENCEGRD	135.20
1,719	407352.55	3777575.90	FENCEGRD	135.23
1,720	407357.52	3777575.93	FENCEGRD	135.25
1,721	407362.49	3777575.96	FENCEGRD	135.30
1,722	407367.46	3777575.99	FENCEGRD	135.35
1,723	407372.42	3777576.02	FENCEGRD	135.39
1,724	407377.39	3777576.05	FENCEGRD	135.45
1,725	407382.36	3777576.08	FENCEGRD	135.50
1,726	407387.32	3777576.11	FENCEGRD	135.57
1,727	407392.29	3777576.15	FENCEGRD	135.64
1,728	407397.26	3777576.18	FENCEGRD	135.70
1,729	407402.23	3777576.21	FENCEGRD	135.77
1,730	407407.19	3777576.24	FENCEGRD	135.84
1,731	407412.16	3777576.27	FENCEGRD	135.94
1,732	407417.13	3777576.30	FENCEGRD	136.05
1,733	407422.09	3777576.33	FENCEGRD	136.10
1,734	407427.06	3777576.36	FENCEGRD	136.15
1,735	407432.03	3777576.40	FENCEGRD	136.24
1,736	407437.00	3777576.43	FENCEGRD	136.33
1,737	407441.96	3777576.46	FENCEGRD	136.43
1,738	407446.93	3777576.49	FENCEGRD	136.53
1,739	407451.90	3777576.52	FENCEGRD	136.63
1,740	407456.87	3777576.55	FENCEGRD	136.73

1,741	407461.83	3777576.58	FENCEGRD	136.84
1,742	407466.80	3777576.61	FENCEGRD	136.95
1,743	407471.77	3777576.65	FENCEGRD	137.03
1,744	407476.73	3777576.68	FENCEGRD	137.10
1,745	407481.70	3777576.71	FENCEGRD	137.19
1,746	407486.67	3777576.74	FENCEGRD	137.27
1,747	407491.64	3777576.77	FENCEGRD	137.37
1,748	407496.60	3777576.80	FENCEGRD	137.45
1,749	407501.57	3777576.83	FENCEGRD	137.53
1,750	407506.54	3777576.86	FENCEGRD	137.60
1,751	407511.51	3777576.90	FENCEGRD	137.68
1,752	407516.47	3777576.93	FENCEGRD	137.76
1,753	407521.44	3777576.96	FENCEGRD	137.83
1,754	407324.15	3777579.24	FENCEGRD	135.33
1,755	407315.64	3777572.67	FENCEGRD	135.14
1,756	407332.65	3777580.77	FENCEGRD	135.27
1,757	407337.62	3777580.80	FENCEGRD	135.39
1,758	407342.59	3777580.83	FENCEGRD	135.47
1,759	407347.55	3777580.86	FENCEGRD	135.49
1,760	407352.52	3777580.90	FENCEGRD	135.50
1,761	407357.49	3777580.93	FENCEGRD	135.51
1,762	407362.46	3777580.96	FENCEGRD	135.57
1,763	407367.42	3777580.99	FENCEGRD	135.64
1,764	407372.39	3777581.02	FENCEGRD	135.71
1,765	407377.36	3777581.05	FENCEGRD	135.77
1,766	407382.33	3777581.08	FENCEGRD	135.83
1,767	407387.29	3777581.11	FENCEGRD	135.92
1,768	407392.26	3777581.15	FENCEGRD	135.99
1,769	407397.23	3777581.18	FENCEGRD	136.00
1,770	407402.19	3777581.21	FENCEGRD	136.04
1,771	407407.16	3777581.24	FENCEGRD	136.11
1,772	407412.13	3777581.27	FENCEGRD	136.27
1,773	407417.10	3777581.30	FENCEGRD	136.44
1,774	407422.06	3777581.33	FENCEGRD	136.35
1,775	407427.03	3777581.36	FENCEGRD	136.31
1,776	407432.00	3777581.40	FENCEGRD	136.38
1,777	407436.97	3777581.43	FENCEGRD	136.48
1,778	407441.93	3777581.46	FENCEGRD	136.58

1,779	407446.90	3777581.49	FENCEGRD	136.70
1,780	407451.87	3777581.52	FENCEGRD	136.82
1,781	407456.83	3777581.55	FENCEGRD	136.94
1,782	407461.80	3777581.58	FENCEGRD	137.08
1,783	407466.77	3777581.61	FENCEGRD	137.23
1,784	407471.74	3777581.65	FENCEGRD	137.31
1,785	407476.70	3777581.68	FENCEGRD	137.36
1,786	407481.67	3777581.71	FENCEGRD	137.44
1,787	407486.64	3777581.74	FENCEGRD	137.53
1,788	407491.60	3777581.77	FENCEGRD	137.64
1,789	407496.57	3777581.80	FENCEGRD	137.73
1,790	407501.54	3777581.83	FENCEGRD	137.82
1,791	407506.51	3777581.86	FENCEGRD	137.88
1,792	407511.47	3777581.90	FENCEGRD	137.96
1,793	407516.44	3777581.93	FENCEGRD	138.07
1,794	407521.41	3777581.96	FENCEGRD	138.14
1,795	407526.38	3777581.99	FENCEGRD	138.15
1,796	407324.11	3777584.24	FENCEGRD	135.45
1,797	407317.03	3777581.24	FENCEGRD	135.36
1,798	407312.06	3777576.16	FENCEGRD	135.11
1,799	407332.62	3777585.77	FENCEGRD	135.47
1,800	407337.59	3777585.80	FENCEGRD	135.66
1,801	407342.56	3777585.83	FENCEGRD	135.77
1,802	407347.52	3777585.86	FENCEGRD	135.79
1,803	407352.49	3777585.90	FENCEGRD	135.79
1,804	407357.46	3777585.93	FENCEGRD	135.79
1,805	407362.42	3777585.96	FENCEGRD	135.87
1,806	407367.39	3777585.99	FENCEGRD	135.97
1,807	407372.36	3777586.02	FENCEGRD	136.09
1,808	407377.33	3777586.05	FENCEGRD	136.17
1,809	407382.29	3777586.08	FENCEGRD	136.25
1,810	407387.26	3777586.11	FENCEGRD	136.37
1,811	407392.23	3777586.15	FENCEGRD	136.47
1,812	407397.20	3777586.18	FENCEGRD	136.47
1,813	407402.16	3777586.21	FENCEGRD	136.52
1,814	407407.13	3777586.24	FENCEGRD	136.64
1,815	407412.10	3777586.27	FENCEGRD	136.88
1,816	407417.06	3777586.30	FENCEGRD	137.16

1,817	407422.03	3777586.33	FENCEGRD	137.06
1,818	407427.00	3777586.36	FENCEGRD	137.02
1,819	407431.97	3777586.40	FENCEGRD	137.12
1,820	407436.93	3777586.43	FENCEGRD	137.24
1,821	407441.90	3777586.46	FENCEGRD	137.38
1,822	407446.87	3777586.49	FENCEGRD	137.55
1,823	407451.84	3777586.52	FENCEGRD	137.72
1,824	407456.80	3777586.55	FENCEGRD	137.91
1,825	407461.77	3777586.58	FENCEGRD	138.10
1,826	407466.74	3777586.61	FENCEGRD	138.30
1,827	407471.70	3777586.65	FENCEGRD	138.41
1,828	407476.67	3777586.68	FENCEGRD	138.49
1,829	407481.64	3777586.71	FENCEGRD	138.58
1,830	407486.61	3777586.74	FENCEGRD	138.68
1,831	407491.57	3777586.77	FENCEGRD	138.81
1,832	407496.54	3777586.80	FENCEGRD	138.92
1,833	407501.51	3777586.83	FENCEGRD	138.99
1,834	407506.48	3777586.86	FENCEGRD	139.05
1,835	407511.44	3777586.90	FENCEGRD	139.11
1,836	407516.41	3777586.93	FENCEGRD	139.20
1,837	407521.38	3777586.96	FENCEGRD	139.24
1,838	407323.20	3777588.86	FENCEGRD	135.54
1,839	407318.77	3777586.99	FENCEGRD	135.53
1,840	407314.35	3777585.11	FENCEGRD	135.50
1,841	407308.14	3777578.77	FENCEGRD	135.20
1,842	407306.35	3777574.31	FENCEGRD	135.04
1,843	407304.57	3777569.84	FENCEGRD	134.96
1,844	407327.62	3777590.74	FENCEGRD	135.55
1,845	407332.59	3777590.77	FENCEGRD	135.59
1,846	407337.56	3777590.80	FENCEGRD	135.89
1,847	407342.52	3777590.83	FENCEGRD	136.09
1,848	407347.49	3777590.86	FENCEGRD	136.18
1,849	407352.46	3777590.90	FENCEGRD	136.30
1,850	407357.43	3777590.93	FENCEGRD	136.43
1,851	407362.39	3777590.96	FENCEGRD	136.60
1,852	407367.36	3777590.99	FENCEGRD	136.78
1,853	407372.33	3777591.02	FENCEGRD	136.99
1,854	407377.30	3777591.05	FENCEGRD	137.13

1,855	407382.26	3777591.08	FENCEGRD	137.23
1,856	407387.23	3777591.11	FENCEGRD	137.42
1,857	407392.20	3777591.15	FENCEGRD	137.59
1,858	407397.16	3777591.18	FENCEGRD	137.68
1,859	407402.13	3777591.21	FENCEGRD	137.83
1,860	407407.10	3777591.24	FENCEGRD	138.07
1,861	407412.07	3777591.27	FENCEGRD	138.43
1,862	407417.03	3777591.30	FENCEGRD	138.84
1,863	407422.00	3777591.33	FENCEGRD	139.02
1,864	407426.97	3777591.36	FENCEGRD	139.17
1,865	407431.93	3777591.40	FENCEGRD	139.27
1,866	407436.90	3777591.43	FENCEGRD	139.38
1,867	407441.87	3777591.46	FENCEGRD	139.51
1,868	407446.84	3777591.49	FENCEGRD	139.70
1,869	407451.80	3777591.52	FENCEGRD	139.91
1,870	407456.77	3777591.55	FENCEGRD	140.14
1,871	407461.74	3777591.58	FENCEGRD	140.35
1,872	407466.71	3777591.61	FENCEGRD	140.52
1,873	407471.67	3777591.65	FENCEGRD	140.63
1,874	407476.64	3777591.68	FENCEGRD	140.71
1,875	407481.61	3777591.71	FENCEGRD	140.77
1,876	407486.57	3777591.74	FENCEGRD	140.85
1,877	407491.54	3777591.77	FENCEGRD	140.94
1,878	407496.51	3777591.80	FENCEGRD	140.99
1,879	407501.48	3777591.83	FENCEGRD	141.01
1,880	407506.44	3777591.86	FENCEGRD	140.99
1,881	407511.41	3777591.90	FENCEGRD	140.98
1,882	407516.38	3777591.93	FENCEGRD	140.96
1,883	407521.35	3777591.96	FENCEGRD	140.91
1,884	407526.31	3777591.99	FENCEGRD	140.83
1,885	407322.57	3777688.86	FENCEGRD	137.23
1,886	407318.14	3777686.98	FENCEGRD	137.15
1,887	407313.72	3777685.11	FENCEGRD	137.03
1,888	407309.29	3777683.23	FENCEGRD	136.89
1,889	407304.87	3777681.35	FENCEGRD	136.78
1,890	407300.44	3777679.48	FENCEGRD	136.67
1,891	407296.01	3777677.60	FENCEGRD	136.75
1,892	407291.59	3777675.73	FENCEGRD	136.92

1,893	407287.16	3777673.85	FENCEGRD	137.02
1,894	407282.74	3777671.97	FENCEGRD	137.06
1,895	407278.31	3777670.10	FENCEGRD	137.05
1,896	407273.89	3777668.22	FENCEGRD	137.14
1,897	407269.46	3777666.34	FENCEGRD	137.76
1,898	407265.03	3777664.47	FENCEGRD	138.37
1,899	407260.61	3777662.59	FENCEGRD	139.03
1,900	407256.18	3777660.71	FENCEGRD	139.63
1,901	407251.76	3777658.84	FENCEGRD	140.17
1,902	407247.33	3777656.96	FENCEGRD	140.21
1,903	407242.91	3777655.08	FENCEGRD	140.20
1,904	407236.70	3777648.74	FENCEGRD	140.44
1,905	407234.91	3777644.28	FENCEGRD	140.68
1,906	407233.13	3777639.82	FENCEGRD	140.93
1,907	407231.34	3777635.35	FENCEGRD	141.17
1,908	407229.56	3777630.89	FENCEGRD	141.39
1,909	407227.77	3777626.43	FENCEGRD	141.63
1,910	407225.99	3777621.96	FENCEGRD	141.88
1,911	407224.21	3777617.50	FENCEGRD	142.04
1,912	407222.42	3777613.03	FENCEGRD	140.78
1,913	407220.64	3777608.57	FENCEGRD	139.47
1,914	407218.85	3777604.11	FENCEGRD	137.65
1,915	407217.07	3777599.64	FENCEGRD	135.75
1,916	407215.28	3777595.18	FENCEGRD	134.72
1,917	407213.50	3777590.72	FENCEGRD	134.58
1,918	407211.71	3777586.25	FENCEGRD	134.43
1,919	407209.93	3777581.79	FENCEGRD	134.22
1,920	407208.15	3777577.33	FENCEGRD	134.02
1,921	407206.36	3777572.86	FENCEGRD	134.07
1,922	407204.58	3777568.40	FENCEGRD	134.13
1,923	407326.99	3777690.74	FENCEGRD	137.28
1,924	407331.96	3777690.77	FENCEGRD	137.30
1,925	407336.93	3777690.80	FENCEGRD	137.40
1,926	407341.90	3777690.83	FENCEGRD	137.51
1,927	407346.86	3777690.86	FENCEGRD	137.58
1,928	407351.83	3777690.89	FENCEGRD	137.64
1,929	407356.80	3777690.93	FENCEGRD	137.69
1,930	407361.76	3777690.96	FENCEGRD	137.72

1,931	407366.73	3777690.99	FENCEGRD	137.76
1,932	407371.70	3777691.02	FENCEGRD	137.81
1,933	407376.67	3777691.05	FENCEGRD	137.87
1,934	407381.63	3777691.08	FENCEGRD	137.96
1,935	407386.60	3777691.11	FENCEGRD	138.07
1,936	407391.57	3777691.14	FENCEGRD	138.20
1,937	407396.54	3777691.18	FENCEGRD	138.17
1,938	407401.50	3777691.21	FENCEGRD	138.12
1,939	407406.47	3777691.24	FENCEGRD	138.16
1,940	407411.44	3777691.27	FENCEGRD	138.22
1,941	407416.40	3777691.30	FENCEGRD	138.32
1,942	407421.37	3777691.33	FENCEGRD	138.54
1,943	407426.34	3777691.36	FENCEGRD	138.80
1,944	407431.31	3777691.39	FENCEGRD	138.87
1,945	407436.27	3777691.43	FENCEGRD	138.93
1,946	407441.24	3777691.46	FENCEGRD	138.97
1,947	407446.21	3777691.49	FENCEGRD	139.00
1,948	407451.17	3777691.52	FENCEGRD	139.04
1,949	407456.14	3777691.55	FENCEGRD	139.09
1,950	407461.11	3777691.58	FENCEGRD	139.15
1,951	407466.08	3777691.61	FENCEGRD	139.20
1,952	407471.04	3777691.64	FENCEGRD	139.27
1,953	407476.01	3777691.68	FENCEGRD	139.35
1,954	407480.98	3777691.71	FENCEGRD	139.38
1,955	407485.95	3777691.74	FENCEGRD	139.38
1,956	407490.91	3777691.77	FENCEGRD	139.47
1,957	407495.88	3777691.80	FENCEGRD	139.57
1,958	407500.85	3777691.83	FENCEGRD	139.73
1,959	407505.81	3777691.86	FENCEGRD	139.79
1,960	407510.78	3777691.89	FENCEGRD	139.76
1,961	407515.75	3777691.93	FENCEGRD	139.88
1,962	407520.72	3777691.96	FENCEGRD	140.03
1,963	407525.68	3777691.99	FENCEGRD	140.07
1,964	407321.81	3777788.81	FENCEGRD	138.92
1,965	407317.26	3777786.88	FENCEGRD	138.84
1,966	407312.71	3777784.95	FENCEGRD	138.99
1,967	407308.16	3777783.02	FENCEGRD	139.17
1,968	407303.60	3777781.08	FENCEGRD	139.18

1,969	407299.05	3777779.15	FENCEGRD	139.04
1,970	407294.50	3777777.22	FENCEGRD	138.84
1,971	407289.95	3777775.29	FENCEGRD	138.68
1,972	407285.40	3777773.36	FENCEGRD	138.54
1,973	407280.84	3777771.43	FENCEGRD	138.40
1,974	407276.29	3777769.50	FENCEGRD	138.41
1,975	407271.74	3777767.57	FENCEGRD	138.44
1,976	407267.19	3777765.64	FENCEGRD	138.47
1,977	407262.63	3777763.71	FENCEGRD	138.49
1,978	407258.08	3777761.78	FENCEGRD	138.49
1,979	407253.53	3777759.85	FENCEGRD	138.47
1,980	407248.98	3777757.92	FENCEGRD	138.45
1,981	407244.43	3777755.99	FENCEGRD	138.44
1,982	407239.87	3777754.06	FENCEGRD	138.43
1,983	407235.32	3777752.13	FENCEGRD	138.41
1,984	407230.77	3777750.20	FENCEGRD	138.39
1,985	407226.22	3777748.27	FENCEGRD	138.00
1,986	407221.67	3777746.34	FENCEGRD	137.62
1,987	407217.11	3777744.41	FENCEGRD	137.56
1,988	407212.56	3777742.48	FENCEGRD	137.51
1,989	407208.01	3777740.55	FENCEGRD	137.41
1,990	407203.46	3777738.62	FENCEGRD	137.27
1,991	407198.91	3777736.69	FENCEGRD	137.12
1,992	407194.35	3777734.76	FENCEGRD	136.73
1,993	407189.80	3777732.83	FENCEGRD	135.98
1,994	407185.25	3777730.90	FENCEGRD	135.41
1,995	407180.70	3777728.97	FENCEGRD	134.96
1,996	407176.14	3777727.04	FENCEGRD	135.40
1,997	407171.59	3777725.11	FENCEGRD	136.26
1,998	407165.20	3777718.59	FENCEGRD	136.81
1,999	407163.37	3777714.00	FENCEGRD	136.88
2,000	407161.53	3777709.41	FENCEGRD	136.89
2,001	407159.70	3777704.82	FENCEGRD	136.60
2,002	407157.86	3777700.23	FENCEGRD	136.30
2,003	407156.03	3777695.63	FENCEGRD	135.92
2,004	407154.19	3777691.04	FENCEGRD	135.64
2,005	407152.36	3777686.45	FENCEGRD	135.62
2,006	407150.52	3777681.86	FENCEGRD	135.70

2,007	407148.69	3777677.27	FENCEGRD	136.59
2,008	407146.85	3777672.68	FENCEGRD	137.90
2,009	407145.02	3777668.09	FENCEGRD	138.79
2,010	407143.18	3777663.50	FENCEGRD	139.08
2,011	407141.35	3777658.90	FENCEGRD	139.37
2,012	407139.51	3777654.31	FENCEGRD	139.68
2,013	407137.67	3777649.72	FENCEGRD	139.97
2,014	407135.84	3777645.13	FENCEGRD	140.25
2,015	407134.00	3777640.54	FENCEGRD	140.54
2,016	407132.17	3777635.95	FENCEGRD	140.79
2,017	407130.33	3777631.36	FENCEGRD	140.99
2,018	407128.50	3777626.77	FENCEGRD	140.07
2,019	407126.66	3777622.18	FENCEGRD	137.86
2,020	407124.83	3777617.58	FENCEGRD	135.78
2,021	407122.99	3777612.99	FENCEGRD	134.66
2,022	407121.16	3777608.40	FENCEGRD	133.76
2,023	407119.32	3777603.81	FENCEGRD	133.78
2,024	407117.49	3777599.22	FENCEGRD	133.83
2,025	407115.65	3777594.63	FENCEGRD	133.85
2,026	407113.82	3777590.04	FENCEGRD	133.85
2,027	407111.98	3777585.45	FENCEGRD	133.77
2,028	407110.14	3777580.86	FENCEGRD	133.67
2,029	407108.31	3777576.26	FENCEGRD	133.59
2,030	407106.47	3777571.67	FENCEGRD	133.53
2,031	407104.64	3777567.08	FENCEGRD	133.48
2,032	407326.36	3777790.74	FENCEGRD	138.98
2,033	407331.33	3777790.77	FENCEGRD	138.94
2,034	407336.30	3777790.80	FENCEGRD	138.97
2,035	407341.27	3777790.83	FENCEGRD	139.05
2,036	407346.23	3777790.86	FENCEGRD	139.14
2,037	407351.20	3777790.89	FENCEGRD	139.22
2,038	407356.17	3777790.92	FENCEGRD	139.30
2,039	407361.14	3777790.95	FENCEGRD	139.37
2,040	407366.10	3777790.99	FENCEGRD	139.45
2,041	407371.07	3777791.02	FENCEGRD	139.54
2,042	407376.04	3777791.05	FENCEGRD	139.62
2,043	407381.00	3777791.08	FENCEGRD	139.72
2,044	407385.97	3777791.11	FENCEGRD	139.81

2,045	407390.94	3777791.14	FENCEGRD	139.85
2,046	407395.91	3777791.17	FENCEGRD	139.93
2,047	407400.87	3777791.20	FENCEGRD	140.05
2,048	407405.84	3777791.24	FENCEGRD	140.17
2,049	407410.81	3777791.27	FENCEGRD	140.27
2,050	407415.78	3777791.30	FENCEGRD	140.33
2,051	407420.74	3777791.33	FENCEGRD	140.39
2,052	407425.71	3777791.36	FENCEGRD	140.45
2,053	407430.68	3777791.39	FENCEGRD	140.51
2,054	407435.64	3777791.42	FENCEGRD	140.55
2,055	407440.61	3777791.45	FENCEGRD	140.59
2,056	407445.58	3777791.49	FENCEGRD	140.64
2,057	407450.55	3777791.52	FENCEGRD	140.68
2,058	407455.51	3777791.55	FENCEGRD	140.73
2,059	407460.48	3777791.58	FENCEGRD	140.80
2,060	407465.45	3777791.61	FENCEGRD	140.85
2,061	407470.41	3777791.64	FENCEGRD	140.91
2,062	407475.38	3777791.67	FENCEGRD	140.96
2,063	407480.35	3777791.70	FENCEGRD	141.01
2,064	407485.32	3777791.74	FENCEGRD	141.08
2,065	407490.28	3777791.77	FENCEGRD	141.12
2,066	407495.25	3777791.80	FENCEGRD	141.15
2,067	407500.22	3777791.83	FENCEGRD	141.21
2,068	407505.19	3777791.86	FENCEGRD	141.27
2,069	407510.15	3777791.89	FENCEGRD	141.34
2,070	407515.12	3777791.92	FENCEGRD	141.40
2,071	407520.09	3777791.95	FENCEGRD	141.46
2,072	407525.05	3777791.99	FENCEGRD	141.49
2,073	407321.22	3777888.82	FENCEGRD	140.68
2,074	407316.71	3777886.91	FENCEGRD	140.61
2,075	407312.20	3777884.99	FENCEGRD	140.75
2,076	407307.69	3777883.08	FENCEGRD	140.86
2,077	407303.17	3777881.17	FENCEGRD	140.85
2,078	407298.66	3777879.25	FENCEGRD	140.85
2,079	407294.15	3777877.34	FENCEGRD	140.84
2,080	407289.64	3777875.43	FENCEGRD	140.82
2,081	407285.12	3777873.51	FENCEGRD	140.75
2,082	407280.61	3777871.60	FENCEGRD	140.67

2,083	407276.10	3777869.69	FENCEGRD	140.55
2,084	407271.59	3777867.77	FENCEGRD	140.50
2,085	407267.07	3777865.86	FENCEGRD	140.49
2,086	407262.56	3777863.95	FENCEGRD	140.48
2,087	407258.05	3777862.03	FENCEGRD	140.35
2,088	407253.54	3777860.12	FENCEGRD	140.10
2,089	407249.02	3777858.21	FENCEGRD	139.92
2,090	407244.51	3777856.29	FENCEGRD	139.89
2,091	407240.00	3777854.38	FENCEGRD	139.86
2,092	407235.49	3777852.47	FENCEGRD	139.88
2,093	407230.97	3777850.55	FENCEGRD	139.87
2,094	407226.46	3777848.64	FENCEGRD	139.83
2,095	407221.95	3777846.73	FENCEGRD	139.77
2,096	407217.44	3777844.81	FENCEGRD	139.66
2,097	407212.92	3777842.90	FENCEGRD	139.60
2,098	407208.41	3777840.99	FENCEGRD	139.59
2,099	407203.90	3777839.07	FENCEGRD	139.56
2,100	407199.39	3777837.16	FENCEGRD	139.47
2,101	407194.87	3777835.25	FENCEGRD	139.41
2,102	407190.36	3777833.33	FENCEGRD	139.35
2,103	407185.85	3777831.42	FENCEGRD	139.38
2,104	407181.34	3777829.51	FENCEGRD	139.44
2,105	407176.82	3777827.59	FENCEGRD	139.45
2,106	407172.31	3777825.68	FENCEGRD	139.45
2,107	407167.80	3777823.77	FENCEGRD	139.49
2,108	407163.29	3777821.85	FENCEGRD	139.37
2,109	407158.77	3777819.94	FENCEGRD	139.15
2,110	407154.26	3777818.03	FENCEGRD	138.97
2,111	407149.75	3777816.11	FENCEGRD	138.83
2,112	407145.24	3777814.20	FENCEGRD	138.83
2,113	407140.72	3777812.29	FENCEGRD	138.81
2,114	407136.21	3777810.37	FENCEGRD	138.73
2,115	407131.70	3777808.46	FENCEGRD	138.40
2,116	407127.19	3777806.55	FENCEGRD	138.15
2,117	407122.68	3777804.63	FENCEGRD	138.09
2,118	407118.16	3777802.72	FENCEGRD	138.07
2,119	407113.65	3777800.81	FENCEGRD	138.09
2,120	407109.14	3777798.89	FENCEGRD	138.11

2,121	407104.63	3777796.98	FENCEGRD	138.14
2,122	407100.11	3777795.07	FENCEGRD	138.09
2,123	407093.78	3777788.60	FENCEGRD	137.59
2,124	407091.96	3777784.05	FENCEGRD	137.23
2,125	407090.14	3777779.50	FENCEGRD	137.18
2,126	407088.32	3777774.95	FENCEGRD	137.19
2,127	407086.50	3777770.40	FENCEGRD	137.25
2,128	407084.68	3777765.85	FENCEGRD	137.34
2,129	407082.86	3777761.30	FENCEGRD	137.38
2,130	407081.05	3777756.75	FENCEGRD	137.35
2,131	407079.23	3777752.19	FENCEGRD	137.31
2,132	407077.41	3777747.64	FENCEGRD	137.23
2,133	407075.59	3777743.09	FENCEGRD	137.16
2,134	407073.77	3777738.54	FENCEGRD	136.98
2,135	407071.95	3777733.99	FENCEGRD	136.76
2,136	407070.13	3777729.44	FENCEGRD	136.55
2,137	407068.31	3777724.89	FENCEGRD	136.32
2,138	407066.49	3777720.34	FENCEGRD	136.16
2,139	407064.67	3777715.79	FENCEGRD	136.11
2,140	407062.85	3777711.23	FENCEGRD	136.22
2,141	407061.03	3777706.68	FENCEGRD	137.37
2,142	407059.21	3777702.13	FENCEGRD	138.78
2,143	407057.39	3777697.58	FENCEGRD	139.39
2,144	407055.57	3777693.03	FENCEGRD	139.79
2,145	407053.76	3777688.48	FENCEGRD	140.04
2,146	407051.94	3777683.93	FENCEGRD	140.24
2,147	407050.12	3777679.38	FENCEGRD	140.42
2,148	407048.30	3777674.83	FENCEGRD	140.59
2,149	407046.48	3777670.27	FENCEGRD	140.76
2,150	407044.66	3777665.72	FENCEGRD	140.94
2,151	407042.84	3777661.17	FENCEGRD	141.11
2,152	407041.02	3777656.62	FENCEGRD	139.90
2,153	407039.20	3777652.07	FENCEGRD	138.25
2,154	407037.38	3777647.52	FENCEGRD	136.35
2,155	407035.56	3777642.97	FENCEGRD	134.64
2,156	407033.74	3777638.42	FENCEGRD	133.66
2,157	407031.92	3777633.86	FENCEGRD	133.62
2,158	407030.10	3777629.31	FENCEGRD	133.67

2,159	407028.28	3777624.76	FENCEGRD	133.77
2,160	407026.47	3777620.21	FENCEGRD	133.83
2,161	407024.65	3777615.66	FENCEGRD	133.61
2,162	407022.83	3777611.11	FENCEGRD	133.37
2,163	407021.01	3777606.56	FENCEGRD	133.25
2,164	407019.19	3777602.01	FENCEGRD	133.16
2,165	407017.37	3777597.46	FENCEGRD	133.08
2,166	407015.55	3777592.90	FENCEGRD	133.03
2,167	407013.73	3777588.35	FENCEGRD	132.88
2,168	407011.91	3777583.80	FENCEGRD	132.38
2,169	407010.09	3777579.25	FENCEGRD	132.09
2,170	407008.27	3777574.70	FENCEGRD	132.24
2,171	407006.45	3777570.15	FENCEGRD	132.21
2,172	407004.63	3777565.60	FENCEGRD	132.22
2,173	407325.74	3777890.73	FENCEGRD	140.79
2,174	407330.70	3777890.76	FENCEGRD	140.93
2,175	407335.67	3777890.80	FENCEGRD	141.05
2,176	407340.64	3777890.83	FENCEGRD	141.08
2,177	407345.60	3777890.86	FENCEGRD	141.11
2,178	407350.57	3777890.89	FENCEGRD	141.13
2,179	407355.54	3777890.92	FENCEGRD	141.19
2,180	407360.51	3777890.95	FENCEGRD	141.25
2,181	407365.47	3777890.98	FENCEGRD	141.32
2,182	407370.44	3777891.01	FENCEGRD	141.41
2,183	407375.41	3777891.05	FENCEGRD	141.53
2,184	407380.38	3777891.08	FENCEGRD	141.64
2,185	407385.34	3777891.11	FENCEGRD	141.76
2,186	407390.31	3777891.14	FENCEGRD	141.82
2,187	407395.28	3777891.17	FENCEGRD	141.88
2,188	407400.24	3777891.20	FENCEGRD	142.01
2,189	407405.21	3777891.23	FENCEGRD	142.12
2,190	407410.18	3777891.26	FENCEGRD	142.22
2,191	407415.15	3777891.30	FENCEGRD	142.30
2,192	407420.11	3777891.33	FENCEGRD	142.38
2,193	407425.08	3777891.36	FENCEGRD	142.47
2,194	407430.05	3777891.39	FENCEGRD	142.54
2,195	407435.01	3777891.42	FENCEGRD	142.58
2,196	407439.98	3777891.45	FENCEGRD	142.66

2,197	407444.95	3777891.48	FENCEGRD	142.77
2,198	407449.92	3777891.51	FENCEGRD	142.85
2,199	407454.88	3777891.55	FENCEGRD	142.92
2,200	407459.85	3777891.58	FENCEGRD	142.97
2,201	407464.82	3777891.61	FENCEGRD	143.04
2,202	407469.79	3777891.64	FENCEGRD	143.14
2,203	407474.75	3777891.67	FENCEGRD	143.09
2,204	407479.72	3777891.70	FENCEGRD	142.99
2,205	407484.69	3777891.73	FENCEGRD	143.05
2,206	407489.65	3777891.76	FENCEGRD	143.09
2,207	407494.62	3777891.80	FENCEGRD	143.11
2,208	407499.59	3777891.83	FENCEGRD	143.17
2,209	407504.56	3777891.86	FENCEGRD	143.26
2,210	407509.52	3777891.89	FENCEGRD	143.36
2,211	407514.49	3777891.92	FENCEGRD	143.45
2,212	407519.46	3777891.95	FENCEGRD	143.49
2,213	407524.43	3777891.98	FENCEGRD	143.56
2,214	407320.55	3777988.80	FENCEGRD	143.13
2,215	407315.99	3777986.86	FENCEGRD	143.19
2,216	407311.43	3777984.93	FENCEGRD	143.30
2,217	407306.87	3777983.00	FENCEGRD	143.30
2,218	407302.31	3777981.06	FENCEGRD	143.28
2,219	407297.75	3777979.13	FENCEGRD	143.24
2,220	407293.19	3777977.20	FENCEGRD	143.21
2,221	407288.63	3777975.26	FENCEGRD	143.10
2,222	407284.07	3777973.33	FENCEGRD	143.00
2,223	407279.51	3777971.40	FENCEGRD	142.91
2,224	407274.95	3777969.46	FENCEGRD	142.84
2,225	407270.39	3777967.53	FENCEGRD	142.74
2,226	407265.83	3777965.60	FENCEGRD	142.64
2,227	407261.27	3777963.66	FENCEGRD	142.57
2,228	407256.71	3777961.73	FENCEGRD	142.52
2,229	407252.15	3777959.80	FENCEGRD	142.48
2,230	407247.59	3777957.86	FENCEGRD	142.45
2,231	407243.03	3777955.93	FENCEGRD	142.44
2,232	407238.47	3777954.00	FENCEGRD	142.35
2,233	407233.91	3777952.06	FENCEGRD	142.24
2,234	407229.35	3777950.13	FENCEGRD	142.13

2,235	407224.79	3777948.20	FENCEGRD	142.03
2,236	407220.23	3777946.26	FENCEGRD	141.94
2,237	407215.67	3777944.33	FENCEGRD	141.86
2,238	407211.11	3777942.40	FENCEGRD	141.82
2,239	407206.55	3777940.46	FENCEGRD	141.75
2,240	407201.99	3777938.53	FENCEGRD	141.68
2,241	407197.43	3777936.60	FENCEGRD	141.64
2,242	407192.87	3777934.66	FENCEGRD	141.66
2,243	407188.31	3777932.73	FENCEGRD	141.70
2,244	407183.75	3777930.80	FENCEGRD	141.67
2,245	407179.19	3777928.86	FENCEGRD	141.64
2,246	407174.63	3777926.93	FENCEGRD	141.64
2,247	407170.07	3777925.00	FENCEGRD	141.58
2,248	407165.51	3777923.06	FENCEGRD	141.49
2,249	407160.95	3777921.13	FENCEGRD	141.37
2,250	407156.39	3777919.20	FENCEGRD	141.24
2,251	407151.83	3777917.26	FENCEGRD	141.08
2,252	407147.27	3777915.33	FENCEGRD	140.91
2,253	407142.71	3777913.40	FENCEGRD	140.83
2,254	407138.16	3777911.46	FENCEGRD	140.77
2,255	407133.60	3777909.53	FENCEGRD	140.56
2,256	407129.04	3777907.60	FENCEGRD	140.36
2,257	407124.48	3777905.66	FENCEGRD	140.21
2,258	407119.92	3777903.73	FENCEGRD	140.07
2,259	407115.36	3777901.80	FENCEGRD	139.92
2,260	407110.80	3777899.86	FENCEGRD	139.85
2,261	407106.24	3777897.93	FENCEGRD	139.85
2,262	407101.68	3777896.00	FENCEGRD	139.49
2,263	407097.12	3777894.06	FENCEGRD	138.86
2,264	407092.56	3777892.13	FENCEGRD	138.45
2,265	407088.00	3777890.20	FENCEGRD	138.17
2,266	407083.44	3777888.26	FENCEGRD	138.02
2,267	407078.88	3777886.33	FENCEGRD	137.89
2,268	407074.32	3777884.40	FENCEGRD	138.19
2,269	407069.76	3777882.46	FENCEGRD	138.46
2,270	407065.20	3777880.53	FENCEGRD	138.59
2,271	407060.64	3777878.60	FENCEGRD	138.73
2,272	407056.08	3777876.66	FENCEGRD	138.85

2,273	407051.52	3777874.73	FENCEGRD	138.76
2,274	407046.96	3777872.80	FENCEGRD	138.42
2,275	407042.40	3777870.86	FENCEGRD	138.09
2,276	407037.84	3777868.93	FENCEGRD	137.89
2,277	407033.28	3777867.00	FENCEGRD	137.79
2,278	407028.72	3777865.06	FENCEGRD	137.75
2,279	407022.32	3777858.53	FENCEGRD	137.83
2,280	407020.48	3777853.93	FENCEGRD	137.81
2,281	407018.65	3777849.33	FENCEGRD	137.80
2,282	407016.81	3777844.73	FENCEGRD	137.64
2,283	407014.97	3777840.13	FENCEGRD	137.19
2,284	407013.13	3777835.54	FENCEGRD	136.48
2,285	407011.29	3777830.94	FENCEGRD	136.60
2,286	407009.45	3777826.34	FENCEGRD	137.12
2,287	407007.61	3777821.74	FENCEGRD	137.27
2,288	407005.78	3777817.14	FENCEGRD	137.24
2,289	407003.94	3777812.54	FENCEGRD	137.19
2,290	407002.10	3777807.94	FENCEGRD	137.11
2,291	407000.26	3777803.34	FENCEGRD	137.05
2,292	406998.42	3777798.74	FENCEGRD	137.05
2,293	406996.58	3777794.15	FENCEGRD	136.98
2,294	406994.75	3777789.55	FENCEGRD	136.66
2,295	406992.91	3777784.95	FENCEGRD	136.37
2,296	406991.07	3777780.35	FENCEGRD	136.30
2,297	406989.23	3777775.75	FENCEGRD	136.25
2,298	406987.39	3777771.15	FENCEGRD	136.20
2,299	406985.55	3777766.55	FENCEGRD	136.11
2,300	406983.72	3777761.95	FENCEGRD	136.01
2,301	406981.88	3777757.35	FENCEGRD	135.94
2,302	406980.04	3777752.76	FENCEGRD	135.91
2,303	406978.20	3777748.16	FENCEGRD	136.15
2,304	406976.36	3777743.56	FENCEGRD	136.50
2,305	406974.52	3777738.96	FENCEGRD	138.39
2,306	406972.68	3777734.36	FENCEGRD	140.30
2,307	406970.85	3777729.76	FENCEGRD	140.81
2,308	406969.01	3777725.16	FENCEGRD	140.90
2,309	406967.17	3777720.56	FENCEGRD	140.98
2,310	406965.33	3777715.96	FENCEGRD	141.06

2,311	406963.49	3777711.37	FENCEGRD	141.08
2,312	406961.65	3777706.77	FENCEGRD	141.01
2,313	406959.82	3777702.17	FENCEGRD	140.94
2,314	406957.98	3777697.57	FENCEGRD	140.86
2,315	406956.14	3777692.97	FENCEGRD	140.77
2,316	406954.30	3777688.37	FENCEGRD	139.00
2,317	406952.46	3777683.77	FENCEGRD	136.71
2,318	406950.62	3777679.17	FENCEGRD	135.23
2,319	406948.78	3777674.57	FENCEGRD	134.55
2,320	406946.95	3777669.98	FENCEGRD	134.27
2,321	406945.11	3777665.38	FENCEGRD	134.26
2,322	406943.27	3777660.78	FENCEGRD	134.24
2,323	406941.43	3777656.18	FENCEGRD	134.14
2,324	406939.59	3777651.58	FENCEGRD	134.08
2,325	406937.75	3777646.98	FENCEGRD	134.07
2,326	406935.92	3777642.38	FENCEGRD	134.10
2,327	406934.08	3777637.78	FENCEGRD	134.16
2,328	406932.24	3777633.18	FENCEGRD	134.21
2,329	406930.40	3777628.59	FENCEGRD	134.22
2,330	406928.56	3777623.99	FENCEGRD	134.22
2,331	406926.72	3777619.39	FENCEGRD	134.27
2,332	406924.89	3777614.79	FENCEGRD	134.36
2,333	406923.05	3777610.19	FENCEGRD	134.47
2,334	406921.21	3777605.59	FENCEGRD	134.55
2,335	406919.37	3777600.99	FENCEGRD	134.58
2,336	406917.53	3777596.39	FENCEGRD	134.58
2,337	406915.69	3777591.79	FENCEGRD	134.59
2,338	406913.85	3777587.20	FENCEGRD	134.62
2,339	406912.02	3777582.60	FENCEGRD	134.66
2,340	406910.18	3777578.00	FENCEGRD	134.72
2,341	406908.34	3777573.40	FENCEGRD	134.78
2,342	406906.50	3777568.80	FENCEGRD	134.80
2,343	406904.66	3777564.20	FENCEGRD	134.53
2,344	407325.11	3777990.73	FENCEGRD	143.15
2,345	407330.07	3777990.76	FENCEGRD	143.22
2,346	407335.04	3777990.79	FENCEGRD	143.34
2,347	407340.01	3777990.83	FENCEGRD	143.22
2,348	407344.98	3777990.86	FENCEGRD	143.13

2,349	407349.94	3777990.89	FENCEGRD	143.32
2,350	407354.91	3777990.92	FENCEGRD	143.54
2,351	407359.88	3777990.95	FENCEGRD	143.81
2,352	407364.84	3777990.98	FENCEGRD	144.03
2,353	407369.81	3777991.01	FENCEGRD	144.20
2,354	407374.78	3777991.04	FENCEGRD	144.07
2,355	407379.75	3777991.08	FENCEGRD	143.99
2,356	407384.71	3777991.11	FENCEGRD	144.03
2,357	407389.68	3777991.14	FENCEGRD	144.07
2,358	407394.65	3777991.17	FENCEGRD	144.13
2,359	407399.62	3777991.20	FENCEGRD	144.19
2,360	407404.58	3777991.23	FENCEGRD	144.26
2,361	407409.55	3777991.26	FENCEGRD	144.40
2,362	407414.52	3777991.29	FENCEGRD	144.49
2,363	407419.48	3777991.33	FENCEGRD	144.53
2,364	407424.45	3777991.36	FENCEGRD	144.57
2,365	407429.42	3777991.39	FENCEGRD	144.62
2,366	407434.39	3777991.42	FENCEGRD	144.65
2,367	407439.35	3777991.45	FENCEGRD	144.68
2,368	407444.32	3777991.48	FENCEGRD	144.68
2,369	407449.29	3777991.51	FENCEGRD	144.68
2,370	407454.25	3777991.54	FENCEGRD	144.69
2,371	407459.22	3777991.58	FENCEGRD	144.76
2,372	407464.19	3777991.61	FENCEGRD	144.83
2,373	407469.16	3777991.64	FENCEGRD	144.86
2,374	407474.12	3777991.67	FENCEGRD	144.88
2,375	407479.09	3777991.70	FENCEGRD	144.90
2,376	407484.06	3777991.73	FENCEGRD	145.14
2,377	407489.03	3777991.76	FENCEGRD	145.48
2,378	407493.99	3777991.79	FENCEGRD	145.56
2,379	407498.96	3777991.83	FENCEGRD	145.63
2,380	407503.93	3777991.86	FENCEGRD	145.63
2,381	407508.89	3777991.89	FENCEGRD	145.59
2,382	407513.86	3777991.92	FENCEGRD	145.52
2,383	407518.83	3777991.95	FENCEGRD	145.50
2,384	407523.80	3777991.98	FENCEGRD	145.50
2,385	407332.75	3777565.77	FENCEINT	134.89
2,386	407337.71	3777565.80	FENCEINT	135.09

2,387	407342.68	3777565.83	FENCEINT	135.19
2,388	407347.65	3777565.87	FENCEINT	135.24
2,389	407352.62	3777565.90	FENCEINT	135.28
2,390	407357.58	3777565.93	FENCEINT	135.33
2,391	407362.55	3777565.96	FENCEINT	135.38
2,392	407367.52	3777565.99	FENCEINT	135.42
2,393	407372.49	3777566.02	FENCEINT	135.44
2,394	407377.45	3777566.05	FENCEINT	135.52
2,395	407382.42	3777566.08	FENCEINT	135.63
2,396	407387.39	3777566.12	FENCEINT	135.73
2,397	407392.35	3777566.15	FENCEINT	135.81
2,398	407397.32	3777566.18	FENCEINT	135.86
2,399	407402.29	3777566.21	FENCEINT	135.88
2,400	407407.26	3777566.24	FENCEINT	135.90
2,401	407412.22	3777566.27	FENCEINT	135.99
2,402	407417.19	3777566.30	FENCEINT	136.10
2,403	407422.16	3777566.33	FENCEINT	136.21
2,404	407427.13	3777566.37	FENCEINT	136.31
2,405	407432.09	3777566.40	FENCEINT	136.40
2,406	407437.06	3777566.43	FENCEINT	136.48
2,407	407442.03	3777566.46	FENCEINT	136.56
2,408	407446.99	3777566.49	FENCEINT	136.63
2,409	407451.96	3777566.52	FENCEINT	136.72
2,410	407456.93	3777566.55	FENCEINT	136.87
2,411	407461.90	3777566.58	FENCEINT	136.94
2,412	407466.86	3777566.62	FENCEINT	136.95
2,413	407471.83	3777566.65	FENCEINT	137.01
2,414	407476.80	3777566.68	FENCEINT	137.08
2,415	407481.76	3777566.71	FENCEINT	137.22
2,416	407486.73	3777566.74	FENCEINT	137.33
2,417	407491.70	3777566.77	FENCEINT	137.35
2,418	407496.67	3777566.80	FENCEINT	137.44
2,419	407501.63	3777566.83	FENCEINT	137.56
2,420	407506.60	3777566.87	FENCEINT	137.60
2,421	407511.57	3777566.90	FENCEINT	137.63
2,422	407516.54	3777566.93	FENCEINT	137.66
2,423	407521.50	3777566.96	FENCEINT	137.73
2,424	407526.52	3777562.08	FENCEINT	137.90

2,425	407526.57	3777557.16	FENCEINT	137.84
2,426	407526.61	3777552.25	FENCEINT	137.76
2,427	407526.66	3777547.33	FENCEINT	137.57
2,428	407526.71	3777542.42	FENCEINT	137.39
2,429	407526.76	3777537.50	FENCEINT	137.31
2,430	407526.80	3777532.59	FENCEINT	137.23
2,431	407526.85	3777527.67	FENCEINT	137.06
2,432	407526.90	3777522.76	FENCEINT	136.88
2,433	407526.95	3777517.84	FENCEINT	136.73
2,434	407526.99	3777512.93	FENCEINT	136.60
2,435	407527.04	3777508.01	FENCEINT	136.44
2,436	407522.13	3777503.13	FENCEINT	136.23
2,437	407517.17	3777503.15	FENCEINT	136.19
2,438	407512.21	3777503.18	FENCEINT	136.21
2,439	407507.25	3777503.20	FENCEINT	136.20
2,440	407502.29	3777503.23	FENCEINT	136.18
2,441	407497.33	3777503.25	FENCEINT	136.15
2,442	407492.37	3777503.28	FENCEINT	136.11
2,443	407487.41	3777503.30	FENCEINT	136.07
2,444	407482.45	3777503.33	FENCEINT	136.00
2,445	407477.49	3777503.36	FENCEINT	135.90
2,446	407472.52	3777503.38	FENCEINT	135.83
2,447	407467.56	3777503.41	FENCEINT	135.77
2,448	407462.60	3777503.43	FENCEINT	135.62
2,449	407457.64	3777503.46	FENCEINT	135.50
2,450	407452.68	3777503.48	FENCEINT	135.48
2,451	407447.72	3777503.51	FENCEINT	135.41
2,452	407442.76	3777503.53	FENCEINT	135.31
2,453	407437.80	3777503.56	FENCEINT	135.20
2,454	407432.84	3777503.58	FENCEINT	135.09
2,455	407427.88	3777503.61	FENCEINT	135.01
2,456	407422.92	3777503.64	FENCEINT	134.92
2,457	407417.96	3777503.66	FENCEINT	134.83
2,458	407413.00	3777503.69	FENCEINT	134.74
2,459	407408.04	3777503.71	FENCEINT	134.65
2,460	407403.08	3777503.74	FENCEINT	134.63
2,461	407398.12	3777503.76	FENCEINT	134.60
2,462	407393.16	3777503.79	FENCEINT	134.56

2,463	407388.20	3777503.81	FENCEINT	134.52	
2,464	407383.24	3777503.84	FENCEINT	134.48	
2,465	407378.28	3777503.87	FENCEINT	134.44	
2,466	407373.31	3777503.89	FENCEINT	134.39	
2,467	407368.35	3777503.92	FENCEINT	134.34	
2,468	407363.39	3777503.94	FENCEINT	134.30	
2,469	407358.43	3777503.97	FENCEINT	134.26	
2,470	407353.47	3777503.99	FENCEINT	134.21	
2,471	407348.51	3777504.02	FENCEINT	134.16	
2,472	407343.55	3777504.04	FENCEINT	134.11	
2,473	407338.59	3777504.07	FENCEINT	134.04	
2,474	407333.63	3777504.09	FENCEINT	133.90	
2,475	407328.60	3777508.86	FENCEINT	133.98	
2,476	407328.53	3777513.60	FENCEINT	134.09	
2,477	407328.46	3777518.34	FENCEINT	134.18	
2,478	407328.40	3777523.08	FENCEINT	134.26	
2,479	407328.33	3777527.82	FENCEINT	134.35	
2,480	407328.26	3777532.56	FENCEINT	134.44	
2,481	407328.19	3777537.30	FENCEINT	134.53	
2,482	407328.12	3777542.04	FENCEINT	134.63	
2,483	407328.05	3777546.78	FENCEINT	134.72	
2,484	407327.99	3777551.52	FENCEINT	134.81	
2,485	407327.92	3777556.26	FENCEINT	134.89	
2,486	407327.85	3777561.00	FENCEINT	134.92	
2,487	407327.78	3777565.74	FENCEPRI	134.95	
2,488	407526.47	3777566.99	FENCEPRI	137.83	
2,489	407527.09	3777503.10	FENCEPRI	136.29	
2,490	407328.67	3777504.12	FENCEPRI	133.87	

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	407327.78	3777565.74	FENCEPRI	134.95	
2	407328.67	3777504.12	FENCEPRI	133.87	
3	407527.09	3777503.10	FENCEPRI	136.29	
4	407526.47	3777566.99	FENCEPRI	137.83	

Receptor Pathway

Fenceline Grid

Grid Settings

Fenceline Spacing [m]:	5.00
Number of Tired Segments:	1

Segment Number	Distance from Fenceline [m]	Spacing [m]
1	25.00	5.00

Segment Number	Distance from Fenceline [m]	Spacing [m]
2	25.00	5.00

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	FENCEGRD	Receptors generated from Fenceline Grid
3	FENCEINT	Cartesian plant boundary Intermediate Receptors

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\CH-127 Pomona DC R2\AZUS_v9.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: ..\CH-127 Pomona DC R2\AZUS_v9.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 182.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2012			
Upper Air		2012			
On-Site		2012			

Data Period

Data Period to Process

Start Date: 1/1/2012 Start Hour: 1 End Date: 12/31/2016 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Results Summary

C:\Lakes\Monrovia_Arroyo_20190226\Monrovia_Arroyo_20190226.isc

PM10 - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		0.10925	ug/m^3	407141.35	3777658.90	139.37	0.00	139.37	

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APPENDIX D
BIOLOGICAL RESOURCES ASSESSMENT REPORT

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General Biological Resources Assessment

The Arroyo at Monrovia Station Project Site
Monrovia, Los Angeles County, California

Prepared for:
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November 2018

This document is formatted for double-sided printing

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Appendix A Special-Status Animal Species with Potential to Occur on the Project Site
Appendix B Special-Status Plant Species with Potential to Occur on the Project Site
Appendix C State and Federal Database Search Results for Special-Status Animal and Plant Species

List of Abbreviated Terms

AMSL	Above Mean Sea Level
BRA	Biological Resources Assessment
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
FESA	Federal Endangered Species Act
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NOAA	National Oceanic Atmospheric Administration
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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1.0 INTRODUCTION

This report presents the results of MIG's general biological resources assessment (BRA) of the approximately 2.90-acre Arroyo at Monrovia Station Project site located in Monrovia, Los Angeles County, California. The purpose of this report is to verify the type, location, and extent of potential sensitive biological resources within the Project site and vicinity. MIG conducted a field survey of the Project site on October 24, 2018. The Study Area for the field survey and records search encompassed the entire 3.03-acre block bounded by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west. This report provides a thorough description of the biological setting of the site and surrounding area, including the vegetation communities, potential habitat for special status plant and wildlife species, sensitive natural communities, wildlife migration corridors, and potential state- and federal-jurisdictional habitats. An assessment of the project impacts and recommended mitigation measures to avoid, minimize, or compensate for potential adverse impacts to sensitive habitats and species is also included in the report. The evaluation of potential project impacts follows the checklist items from Appendix G of the California Environmental Quality Act (CEQA) guidelines and has been prepared in a format suitable to support CEQA review and to submit with any future regulatory application packages that might be required.

1.1 Project Location

The 2.90-acre Project site is located on a single city block located at the northwest corner of Pomona Ave. and Primrose Ave., in the City of Monrovia, Los Angeles County, California (APNs 8507-002-011, -012, -013, -014, -015, -017, -018, -019, -020, -022, -023, -036, -037). The block is bound by West Evergreen Avenue to the north, South Primrose Avenue to the east, West Pomona Avenue to the south, and South Magnolia Avenue to the west. The Project site occurs within the United States Geological Survey (USGS) 7.5' series Mt. Wilson Quadrangle, Township 1 North, Range 12 West (no section noted) (Figure 1, Regional Map, Figure 2 USGS Topographic Map, and Figure 3, Project Study Area. The Project site is relatively flat, with elevations ranging between approximately 439-453 feet above mean sea level (AMSL). Residential and commercial land uses border the Project site with Interstate 210 directly to the north.

2.0 REGULATORY SETTING

The following discussion identifies federal, state, and local environmental regulations that serve to protect sensitive biological resources relevant to the proposed Project site and CEQA review process.

2.1 Federal

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973, as amended, provides the regulatory framework for the protection of plant and animal species (and their associated critical habitats), which are formally listed, proposed for listing, or candidates for listing as endangered or threatened under the FESA. The FESA has the following four major components: (1) provisions for listing species, (2) requirements for consultation with the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), (3) prohibitions against "taking" (meaning harassing, harming, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species, and (4) provisions for permits that allow incidental "take". The FESA also discusses recovery plans and the designation of critical habitat for listed species. Section 7 requires Federal agencies, in consultation with, and with the assistance of the USFWS or NOAA Fisheries, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Both the USFWS and NOAA Fisheries share the responsibility for administration of the FESA.

2.1.2 The Migratory Bird Treaty Act

The Federal Migratory Bird Treaty Act (MBTA) (16 United States Code [U.S.C.] 703 et seq.), Title 50 Code of Federal Regulations (CFR) Part 10, prohibits taking, killing, possessing, transporting, and importing of migratory birds, parts of migratory birds, and their eggs and nests, except when specifically authorized by the Department of the Interior. As used in the act, the term "take" is defined as meaning, "to pursue, hunt, capture, collect, kill or attempt to pursue, hunt, shoot, capture, collect or kill, unless the context otherwise requires." With a few exceptions, most native birds are considered migratory under the MBTA. Disturbances that causes nest abandonment and/or loss of reproductive effort or loss of habitat upon which these birds depend would be in violation of the MBTA.

2.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act that was first passed in 1940 regulates take, possession, sale, purchase, barter, transport, import and export of any bald or golden eagle or their parts (e.g., nests, eggs, young) unless allowed by permit (16 U.S.C. § 668(a); 50 Code of Federal Regulations [CFR] 22). Take was broadly defined to include shoot, wound, kill, capture, collect, molest, or disturb. In the 1972 amendments, penalties for violations were raised to a maximum fine of $250,000 for an individual or a maximum of two years in prison for a felony conviction, with a doubling for organizations instead of individuals.

2.1.4 Clean Water Act Sections 404 and 401

The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA) (33 USC 1344). Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural

ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the United States regulated under Section 404 include fill for development, water resource projects (e.g., dams and levees), infrastructure developments (e.g., highways, rail lines, and airports) and mining projects. Section 404 of the CWA requires a federal permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the CWA (33 U.S.C. 1341) requires an applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a water quality certification from the state in which the discharge originates The discharge is required to comply with the applicable water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The Environmental Protection Agency (EPA) has delegated responsibility for the protection of water quality in California to State Water Resources Control Board (State Water Board) and its nine Regional Water Quality Control Boards (RWQCBs).

2.2 State

2.2.1 California Endangered Species Act

The State of California enacted similar laws to the FESA, the California Native Plant Protection Act (NPPA) in 1977, and the California Endangered Species Act (CESA) in 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the California Fish and Game Code. To align with the FESA, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the CESA as threatened species but did not do so for rare plants. Thus, these laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. The California Department of Fish and Wildlife (CDFW) implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the California Natural Diversity Database (CNDDB), a computerized inventory of information on the general location and status of California's rarest plants, animals, and natural communities. During the CEQA review process, the CDFW is given the opportunity to comment on the potential of the proposed Project to affect listed plants and animals.

2.2.2 Native Plant Protection Act

The NPPA of 1977 (California Fish and Game Code, §§ 1900 through 1913) directed the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by the CDFW, which has the authority to designate native plants as endangered or rare and to protect them from "take."

2.2.3 California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. CEQA (Public Resources Code Sections 21000 et. seq.) requires public agencies to review activities which may affect the quality of the environment so that consideration is given to preventing damage to the environment. When a lead agency issues a permit for development that could affect the environment, it must disclose the potential environmental effects of the project. This is done with an Initial Study and Negative Declaration (or Mitigated Negative Declaration) or with an Environmental Impact Report. Certain classes of projects are exempt from detailed analysis under CEQA. CEQA Guidelines Section 15380 defines endangered, threatened, and rare species for purposes of

CEQA and clarifies that CEQA review extends to other species that are not formally listed under the state or federal Endangered Species Acts but that meet specified criteria.

2.2.4 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW Fish and Game Commission 1998) although take may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize take resulting from recovery activities for state-listed species.

Species of special concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under the CEQA during project review.

2.2.5 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrow (*Passer domesticus*) and European Starling (*Sturnus vulgaris*). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW.

2.2. California Fish and Game Code Sections 4150-4155

Sections 4150-4155 of the California Fish and Game Code protects non-game mammals, including bats. Section 4150 states "A mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A non-game mammal may not be taken or possessed expect as provided in this code or in accordance with regulations adopted by the commission". The non-game mammals that may be taken or possessed are primarily those that cause crop or property damage. Bats are classified as non-game mammal and are protected under California Fish and Game Code.

2.2. Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These

communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW (i.e., CNDBB) or the USFWS. The CNDBB identifies a number of natural communities as rare, which are given the highest inventory priority (Holland 1986; CDFW 2016). Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

2.2.6 Other Sensitive Plants – California Native Plant Society

Plant species which may not be listed as endangered, threatened, candidate, or proposed species under FESA or CESA, but are still considered rare, are generally assigned a rarity code by the California Native Plant Society (CNPS). The CNPS is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in California. CNPS has compiled an inventory comprised of the information focusing on the geographic distribution and qualitative characterization of Rare, Threatened, or Endangered vascular plant species of California. Under CEQA, impacts analyses are mandatory for List 1 and 2 species, but not for all List 3 and 4 species as some do not meet the definitions of the Federal NPPA or CESA; however, List 3 and 4 impacts to these species are generally considered in most CEQA analyses and are recommended by CNPS.
The CNPS assigns plants to the following categories:

1A Presumed extinct in California;
1B Rare, threatened, or endangered in California and elsewhere;
2 Rare, threatened, or endangered in California, but more common elsewhere;
3 Plants for which more information is needed – A review list; and
4 Plants of limited distribution – A watch list.

Additional endangerment codes are assigned to each taxon as follows:

1 Seriously endangered in California (over 80% of occurrences threatened/high degree of immediacy of threat).
2 Fairly endangered in California (20-80% occurrences threatened).
3 Not very endangered in California (<20% of occurrences threatened or no current threats known).

Plants on Lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing, and the CDFW, as well as other state agencies (e.g., California Department of Forestry and Fire Protection). As part of the CEQA process, such species should be fully considered, as they meet the definition of threatened or endangered under the NPPA and Sections 2062 and 2067 of the California Fish and Game Code. California Rare Plant Rank 3 and 4 species are considered to be plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species be evaluated for consideration during the preparation of CEQA documents (CNPS 2018).

2.2.7 California Fish and Game Code Section 1600-1603

Streams, lakes, and riparian vegetation, as habitat for fish and other wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of the California Fish and Game Code. Any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3)

deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations ("CCR") as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life". This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFW 1994). Riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFW 1994). In addition to impacts to jurisdictional streambeds, removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

2.2.8 Sensitive Natural Communities

Sensitive natural communities are habitats that are either unique in constituent components, of relatively limited distribution in the region, or of particularly high wildlife value. These communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by the CDFW or the USFWS. The CNDDB identifies a number of natural communities as rare, which are given the highest inventory priority (CDFW 2018a). Impacts to sensitive natural communities and habitats must be considered and evaluated under the CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G).

2.3 Local

2.3.1 City of Monrovia General Plan

According to the City of Monrovia General Plan, "little vacant land suitable for development is available. Therefore, future development, like current development patterns, will involve either the intensification of already existing uses or recycling to similar uses." The over 4.5 mile trail system and surrounding Hillside Wilderness Preserve, discussed at length in the Hillside Wilderness Preserve Resource Management Plan (adopted in 2012), will remain protected and intact. Other areas within City boundaries have been designated or envisioned for future development/improvement, are generally urbanized, and have very little value for biological resources.

2.3.2 City of Monrovia Oak Tree Preservation Ordinance

The City of Monrovia Oak Tree Preservation Ordinance (87-11) adopted in 1987 to preserve Monrovia's native oak trees, contains regulations in §17.20.40 of the Monrovia Municipal Code. Oak trees protected include any trees of the genus *Quercus* within the city limits of Monrovia with trunks 10 inches in diameter or more, measured at two feet above the ground. Oaks are protected within: single-family, multiple-family, commercial, or industrial zones, in addition to vacant lots and/or oak trees indicated in an oak tree preservation plan. Oaks must also be protected from grading, oil/gas/other construction chemicals, or signage or other obstructions during construction via an oak protection plan approved by the City's Development Review Committee, which includes guidelines for placing fencing around protected oaks. Activities that will cut an oak to the ground, extract an oak, kill/remove an oak by other means, prune and oak so that more than one-third of the crown/existing foliage/root system is removed, or will disturb underground beneath the dripline of an oak require permitting through the City of Monrovia.

3.0 METHODS

This analysis of potential biological resources located on the Project site includes a review of available background information in and around the vicinity of the Project site and completion of a field survey.

3.1 Literature Review

Prior to conducting field surveys, MIG biologists reviewed available background information pertaining to the biological resources on and in the vicinity of the project. Available literature and resource mapping reviewed included the occurrence records for special-status species and sensitive natural communities and numerous other information sources listed below:

- CDFW California Natural Communities Database (CNDDB) record search within the Mt Wilson and surrounding eight USGS quadrangles (CDFW 2018a)
- CNPS Rare Plant Program, Inventory of Rare and Endangered Plants of California (CNPS 2018) records search within the Mt Wilson and surrounding eight USGS quadrangles
- Soil Survey Staff, Natural Resource Conservation Service (NRCS), United States Department of Agricultural (USDA NRCS 2018)
- CDFW California Natural Community List (CDFW 2018b)
- CDFW State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2018c)
- USFWS Information for Planning and Consultation (IPaC; USFWS 2018a)
- USFWS National Wetlands Inventory (USFWS 2018b)

3.2 Field Surveys

A biological field survey was conducted by MIG senior biologist Jonathan Campbell, PhD on October 24, 2018. The field survey was conducted on foot to assess the existing conditions of the Project site, including recording observed plant and wildlife species, characterizing and delineating the vegetation communities and associated wildlife habitats, and evaluating the potential for these habitats to support special-status species and sensitive communities.

3.2.1 Plant Communities

During the field survey, MIG's senior biologist traversed the entire Project site by foot and evaluated the suitability of onsite vegetation communities to support special status species documented within the Project site. An attempt was made to classify plant communities according to the Second Edition of the Manual of California Vegetation (Sawyer et al. 2009) classification system, as this method is preferred (but not required) by CDFW. However, for certain vegetation types, this system is too species-specific in its definitions of plant associations and alliances and does not accurately characterize the highly variable species composition of plant communities. For this Project site, it was necessary to identify variants of plant community types for ornamental plant assemblages and non-vegetated areas that are not described in the literature. The List of California Natural and Terrestrial Communities (CDFW 2018b) was consulted to determine if any rare or sensitive plant communities are present. In addition, plant communities were evaluated to determine if they are considered sensitive under federal and/or other state regulations and local policies. Plant communities within the Project site were mapped in the field onto a color aerial photograph and digitized into ArcView Geographic Information System (GIS) shapefiles.

3.2.2 Jurisdictional Habitats and Aquatic Features

Although a formal jurisdiction delineation report has not been conducted, habitats on the Project site were assessed to determine if any wetlands and "other waters" or streambeds potentially subject to jurisdiction by the USACE, RWQCB, or CDFW were present. Habitats were evaluated for the presence of wetland indicators including dominance by hydrophytic plant species and presence of wetland hydrology. Estimation of the approximate boundaries of potential USACE and/or RWQCB jurisdictional areas followed standard methodologies as described in the Interim Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region (USACE 2008). The site was also inspected for the presence of drainages, streams, and other aquatic features, including those that support stream-dependent (riparian) plant species that may be considered jurisdictional by CDFW. There are no jurisdictional wetlands and/or waters within or in close proximity to the project boundary. No other sensitive resources were found within the project boundary.

3.2.3 Special-Status Species Habitat Assessment

The potential occurrence of special-status plant and animal species on the Project site was initially evaluated by developing a list of special-status species that are known to or have the potential to occur in the vicinity of the Project site based on a review of past studies including species-specific studies; search of current database records (e.g., CNDDB and CNPS Electronic Inventory records); and review of the USFWS list of federal endangered and threatened species (See Appendix C). The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field survey conducted by MIG. Plant species that have been documented to occur well outside of the elevation and geographic range of the Project site were eliminated from further consideration. Each species was evaluated for its potential to occur on or in the immediate vicinity of the Project site according to the following criteria.

Not Expected. There is no suitable habitat present on the Project site (i.e., habitats on the Project site are clearly unsuitable for the species requirements [e.g., foraging, breeding, cover, substrate, elevation, hydrology, plant community, disturbance regime, etc.]). Additionally, there are no recent known records of occurrence in the vicinity of the Project site. The species has no potential of being found on the Project site.

Low Potential. Limited suitable habitat is present on the Project site (i.e., few of the habitat components meeting the species requirements are present and/or the majority of habitat on the Project site is unsuitable or of very low quality). Additionally, there are no or few recent known records of occurrence in the vicinity of the Project site. The species has a low probability of being found on the Project site.

Moderate Potential. Suitable habitat is present on the Project site (i.e., some of the habitat components meeting the species requirements are present and/or the majority of the habitat on the Project site is suitable or of marginal quality). Additionally, there are few or many recent known records of occurrences in the vicinity of the Project site. The species has a moderate probability of being found on the Project site.

High Potential. Highly suitable habitat is present on the Project site (i.e., all habitat components meeting the species requirements are present and/or all of the habitat on the Project site is highly suitable or of high quality). Additionally, there are few or many recent known records of occurrences

in the vicinity of the Project Site. This species has a high probability of being found on the Project site.

Present. Species was observed on the Project site (i.e., species was either observed during recent surveys or has a recorded observation in the CNDDB on the Project site).

Appendices A and B present the list of special-status plants and animals (respectively) that have the potential to occur in the vicinity of the Project site, their habitat requirements, and a ranking of potential for occurrence on the Project site. Nomenclature used for plant names follows the Second Edition of The Jepson Manual (Baldwin et al. 2012). Nomenclature for wildlife follows CDFW's Complete List of Amphibian, Reptile, Bird, And Mammal Species in California (CDFW 2016) and any changes made to species nomenclature as published in scientific journals since the publication of CDFW's list.

4.0 EXISTING CONDITIONS

The following provides a description of the soils, vegetation communities, wildlife, and wildlife movement corridors present on the Project site.

4.1 Physical Characteristics

The Project area is flat with elevations ranging between 439 to 453 feet above mean sea level (AMSL). The Project area is comprised of a parking lot, two light industrial buildings, 9 residential buildings, and a vacant lot. Approximately 75 percent of the site is developed, with the remaining areas occupied by ornamental vegetation. Residential and commercial land uses border the Project Site with Interstate-210 (I-210) located directly to the north.

4.2 Soils

The Web Soil Survey reports that the entire Project site is covered with Omni clay, drained (184) soils (USDA NRCS 2018).

4.3 Plant Communities & Associated Wildlife Habitats

As described in Section 3 (Methods), plant communities on-site were mapped in the field onto a color aerial photograph (Figure 4, Biological Resources Map) and were evaluated to determine if they are considered sensitive under federal, state, or local regulations or policies. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

The Study area is unvegetated due to development or vegetated by ornamental trees and grasses. Onsite vegetation communities observed during the October 24, 2018 field survey are described in more detail below.

Developed
The Study area is dominated by structures, paved parking lots, and sidewalks. These areas are generally unvegetated although weedy species such as wild oats (Avena fatua), tree of heaven (Ailanthus altissima), castor bean (Ricinus communis), Bermuda grass (Cynodon dactylon), broad leaf filaree (Erodium botrys), and common groundsel (Senecio vulgaris) are present.

Ornamental
Ornamental trees and shrubs are planted in association with the single family homes on the northern half of the Study area and include, but are not limited to, non-native species such as carrotwood (*Cupaniopsis anacardioides*), weeping bottlebrush (*Callistemon viminalis*), Moreton Bay fig (*Ficus macrophylla*), multiflora rose (*Rosa multiflora*), lily of the Nile (*Agapanthus africanus*), Italian cypress (C*upressus sempervirens*), Mexican fan palm (*Washingtonia robusta*), queen palm (*Syagrus romanzoffiana*), hibiscus (*Hibiscus* sp.), bougainvillea (*Bougainvillea* sp.), pine trees. (*Pinus* spp.), and citrus trees (Figure 5, Current Project Site Photographs). Weedy species found throughout include lamb's quarters (*Chenopodium album*), horseweed (*Conyza canadensis*) and prickly lettuce (*Lactuca serriola*). No native oak trees protected by the City are present in the Study area.

4.4 Common Wildlife

Wildlife species that were observed on site during the October 24, 2018 biological field survey include European starling (*Sturnus vulgaris*), Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottus*), American crow (*Corvus brachyrhynchos*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*) and yellow-rumped warbler (*Setophaga coronata*).

Other wildlife species that could inhabit the Project area are limited to urban species adapted to high levels of anthropogenic disturbance. Common urban-tolerant birds include: black phoebe (*Sayornis nigricans*), non-native European Starling (*Sturnus vulgaris*), non-native Eurasian collared dove (*Streptopelia decaocto*) and various other migrant songbirds, such as warblers, vireos, and grosbeaks. Common small mammals expected to occur in the urban setting include, but are not limited to, western gray squirrel (*Sciurus griseus*), raccoon (*Procyon lotor*), California mouse (*Peromyscus californicus*), Virginia opossum (*Didelphis virginiana*), and Botta's pocket gopher (*Thomomys bottae*).

4.5 Sensitive Plant Communities

CDFW and the California Native Plant Society (CNPS) have identified several native plant communities that are rare and unique to California. While they have no legal protection status, impacts to these plant communities may be considered "significant" under CEQA. However, no sensitive plant communities were observed in the Study area.

4.6 Special-Status Plants

Special-status plants are defined here to include: (1) plants that are Federal- or State-listed as rare, threatened or endangered, (2) Federal and State candidates for listing, (3) plants assigned a Rank of 1 through 4 by the CNPS Inventory, and (4) plants that qualify under the definition of "rare" in CEQA, Section 15380.

A total of 49 special-status plant species have been recorded in the proximity of the Study area. Based on the CNDDB, and the biological field survey and habitat suitability analysis conducted by MIG biologists on October 24, 2018, none of the 49 species are expected to occur in the Study area (i.e. species ranked as "Not Expected") based upon lack of essential habitat requirements for the species, the distance to known occurrences and/or the species distributional range, the amount of site disturbance from past and present land uses, and/or the proximity of existing human-related disturbances. A table presenting all special-status plant species considered and evaluated for their potential occurrence in the Study area, including plant species' habitat requirements and reported blooming periods, is provided in A.

4.7 Special-Status Wildlife

Special-status wildlife species include those species listed as endangered or threatened under the Federal Endangered Species Act (FESA) or California Endangered Species Act CESA; candidates for listing by the U.S. Fish and Wildlife Service (USFWS) or CDFW; species of special concern to the CDFW; and birds protected by the USFWS under the Federal Migratory Bird Treaty Act (MTBA) and/or by the CDFW under Fish and Game Code Sections 3503, 3503.5, and 3512. It was initially determined that 45 special-status wildlife species have been recorded in the vicinity of the Study area. Of these wildlife species, none are expected to occur in the Study area (i.e., all species are ranked as "Not Expected"). Reasons include the

absence of essential habitat requirements for the species, the distance to known occurrences and/or the species distributional range, the limited availability of foraging and nesting habitat, the amount of site disturbance from past and present land uses, and/or the proximity of existing human-related disturbances. In addition, no USFWS-designated critical habitat areas for any federally listed wildlife species are present. A table presenting all special-status wildlife species considered and evaluated for their potential occurrence in the Study area, including species' habitat requirements are provided in Appendix B.

Nesting Birds
Migratory birds are also protected under the Federal MBTA, which prohibits killing any migratory bird or disturbing or destroying an active nest of a migratory bird; this list contains hundreds of birds, including many of which are considered common or even nuisance or nonnative species. Nesting birds are also protected under California Fish and Game Code 3503, 3503.5, and 3512, which prohibit the take of active bird nests. The existing trees in the Study area provide potentially suitable nesting habitat for songbirds. Although no active nests were observed during the field surveys, there is potential for ground- and tree-nesting birds to establish nests in the Study area, including in the Project area, prior to initiation of Project construction. These species are protected under the Federal MBTA and would be protected under the California Fish and Game Code when actively nesting.

4.8 Wildlife Movement Corridors

Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species. The regional movement and migration of wildlife species has been substantially altered due to habitat fragmentation over the past century. This fragmentation is most commonly caused by development of open areas, which can result in large patches of land becoming inaccessible and forming a virtual barrier between undeveloped areas. Additional roads associated with development, although narrow, may result in barriers to smaller or less mobile wildlife species. Habitat fragmentation results in isolated islands of habitat, which affects wildlife behavior, foraging activity, reproductive patterns, immigration and emigration or dispersal capabilities, and survivability. Wildlife corridors can consist of a sequence of stepping-stones across the landscape (i.e., discontinuous areas of habitat such as isolated wetlands), continuous lineal strips of vegetation and habitat (e.g., riparian strips and ridge lines), or they may be parts of larger habitat areas selected for its known or likely importance to local wildlife. The Project site does not act as a wildlife movement corridor due to the current built environment at the site as well as the presence of dense urban development surrounding the site including residential neighborhoods, I- 210 freeway to the north, and other development nearby.

4.9 Jurisdictional Waters/Wetlands

This report provides a general review of topographic features and habitats observed onsite, however, no jurisdictional water or wetland features were observed onsite that could be subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), RWQCB jurisdiction pursuant to Section 401 of the CWA, and CDFW jurisdiction pursuant to Division 2, Chapter 6, Section 1600 of the Fish and Game Code. A full jurisdictional delineation was not conducted as part of this effort and no wetlands or jurisdictional features were observed onsite.

5.0 ENVIRONMENTAL IMPACTS

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and aquatic resources that may occur in the Project site. Each impact discussion includes mitigation measures that would be implemented during the project to avoid and/or reduce the potential for and/or level of impacts to each resource. With the implementation of the recommended mitigation measures, all impacts to biological resources are anticipated to be reduced to less than significant pursuant to CEQA.

5.1 Thresholds of Significance

This section describes potential impacts to biological resources that may occur as a result of the construction of the proposed Project. CEQA Guidelines provide guidance in evaluating project impacts and determining whether impacts may be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." In accordance with Appendix G of the CEQA Guidelines, a project could have a significant environmental impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plant (NCCP), or other approved local, regional, or state HCP

5.2 Impacts and Mitigation Measures

Consistent with the requirements of CEQA and local regulations, the significance of potential impacts is evaluated through the application of the significance criteria described above. The objective of the biological resources analysis is to identify potential adverse effects and/or significant impacts on biological resources. Avoidance is often the preferred approach for the management of biological resources; however, it is not always possible to completely avoid impacts. Mitigation measures to avoid or minimize impacts are identified, as appropriate, including procedures to be followed if significant biological resources are identified prior to the initiation of construction.

Construction of the Project includes development of the entirety of the 2.99 acres found onsite. The following discussion provides an overview of the direct and indirect impacts to special status species, sensitive habitats, and other resources that may occur within the Project site.

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or USFWS;

Special Status Plants

No special status plant species were detected on the Project site, nor would any be expected to be present due to the extent of current development and subsequent lack of suitable habitat (refer to Appendix A); therefore, no impacts to special status plants are anticipated as a result of Project implementation, and no further mitigation is required.

Special Status Wildlife

No special status plant wildlife species were detected on the Project site, nor would any be expected to be present due to the extent of current development and subsequent lack of suitable habitat (refer to Appendix B).

Impact BIO-1: Nesting Birds

Implementation of the proposed Project would consist of alteration of an already-developed area which does not support a wide diversity of biological resources. The majority of the Project area currently encompasses residential or industrial land uses. No sensitive habitats that could support special-status plant and wildlife species were identified during the field survey.

Native and ornamental vegetation on the Project site have the potential to provide nesting habitat for bird species protected by the Migratory Bird Treaty Act of 1918 and the California Fish and Game Code Sections 3503, 3503.5, and 3513. Although no active nests were observed during the October 24, 2018 field surveys (i.e. outside of the nesting season), there is potential for ground-, shrub-, and tree-nesting birds to establish nests on the Project site prior to Project construction. Intentional destruction of or disturbance to an active nest is prohibited under State and Federal law. Construction activities including site mobilization, tree removal, other vegetation clearing, grubbing, grading, and noise and vibration from the operation of heavy equipment have the potential to result in significant direct (i.e., death or physical harm) and/or indirect (i.e., nest abandonment) impacts to nesting birds. Impacts would be significant without mitigation. Implementation of mitigation measure MM BIO-1 would be required to reduce impacts on nesting birds to a less than significant level.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS;

No sensitive natural vegetation communities documented by CDFW (2018a, 2018b) or USFWS (2018a) are present on the Project site (refer to Appendix A). There are no riparian features located on site, and all vegetation occurring onsite are non-native ornamentals. No impact to riparian habitat or other sensitive natural communities would occur.

c) 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;

Although a federal/state jurisdictional delineation was not completed as part of this analysis, the Project site does not contain federally protected wetlands as defined by Section 404 of the CWA. No impacts to federally protect wetlands would occur.

d) Interfere substantially with the movement of any native resident or migratory fish and wildlife species or with established native resident or migratory wildlife corridors, or impede the use of a native wildlife nursery site;

The Project site represents a developed and urbanized area and is not located within an established wildlife movement corridor, movement pathway, or linkage between larger habitat areas for terrestrial or aquatic wildlife. Due to the disturbed, limited, and fragmented condition of habitats on site, which would preclude most species from using the site for breeding/nesting, the Project site also does not function as a wildlife nursery site that would contribute disproportionately to a population. Thus, wildlife species, migratory corridors and native wildlife nursery sites will not be impacted due to project implementation and no further mitigation is required.

e) Conflict with any local polices or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

The Project site does not contain any oak trees and would not conflict with any local policies or ordinances protecting biological resources. Therefore, no impact will occur.

f) Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

The Project site is located in the City of Monrovia, Los Angeles County, California and is not located within an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan. Therefore, no impact will occur.

Mitigation Measures

BIO-1 If vegetation removal is scheduled during the nesting season (typically February 1 to September 1), then a focused survey for active nests shall be conducted by a qualified biologist (as determined by a combination of academic training and professional experience in biological sciences and related resource management activities) no more than five (5) days prior to the beginning of excavation, grading and/or vegetation removal. Surveys would be conducted in proposed work areas, staging and storage areas, along equipment transportation routes, and soil, equipment, and material stockpile areas. For passerines and small raptors, surveys should be conducted within a 250-foot radius surrounding the work area (in non-developed areas and where access is feasible). For larger raptors, such as those from the genus Buteo, the survey area should encompass a 500-foot radius. Surveys shall be conducted during weather conditions suited to maximize the observation of possible nests and shall concentrate on areas of suitable habitat. If a lapse in Project-related work of five (5) days or longer occurs, an additional nest survey shall be required before work can be reinitiated.

If active nests are found during any preconstruction survey, a qualified biologist shall establish an appropriate buffer between the nest and active construction. The qualified biologist shall clearly mark

the established buffer. The Project proponent shall maintain the buffer until young have fledged and are foraging independently. The qualified biologist shall document pre-construction baseline monitoring of the nest to characterize "normal" bird behavior. The qualified biologist shall monitor the nesting birds daily during construction activities and shall increase the buffer if birds are showing signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and flying away from the nest). If this is not possible, work shall cease in the area until young have fledged and the nest is no longer active (e.g. young have fledged, predation, or other non-anthropogenic nest failure).

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FIGURES

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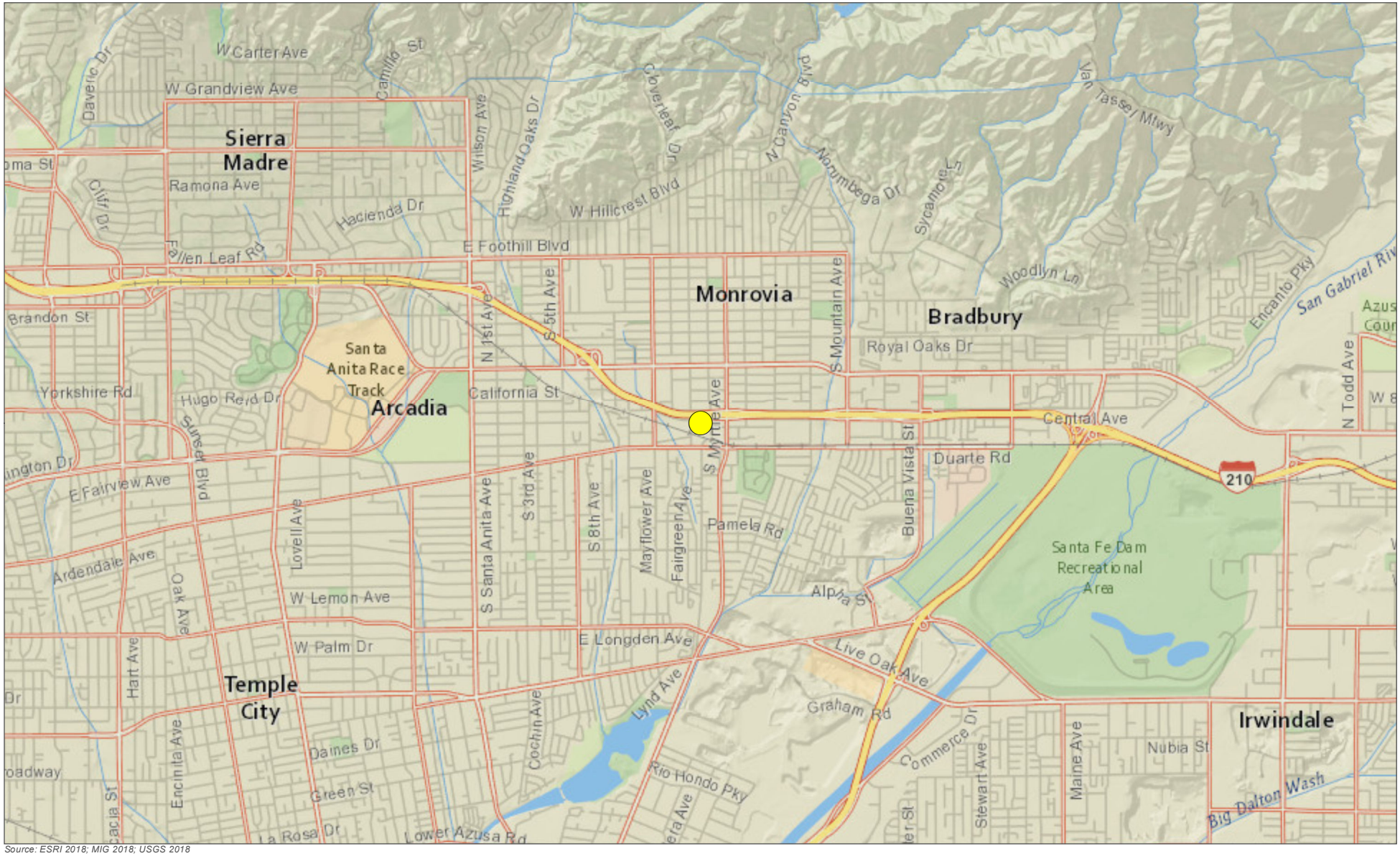

Source: ESRI 2018; MIG 2018; USGS 2018

Project Boundary: 3.06 ac

0 0.5 1 2 Miles

Figure 1 Regional Map

Arroyo at Monrovia Station Specific Plan - Monrovia, Los Angeles County, CA

MIG

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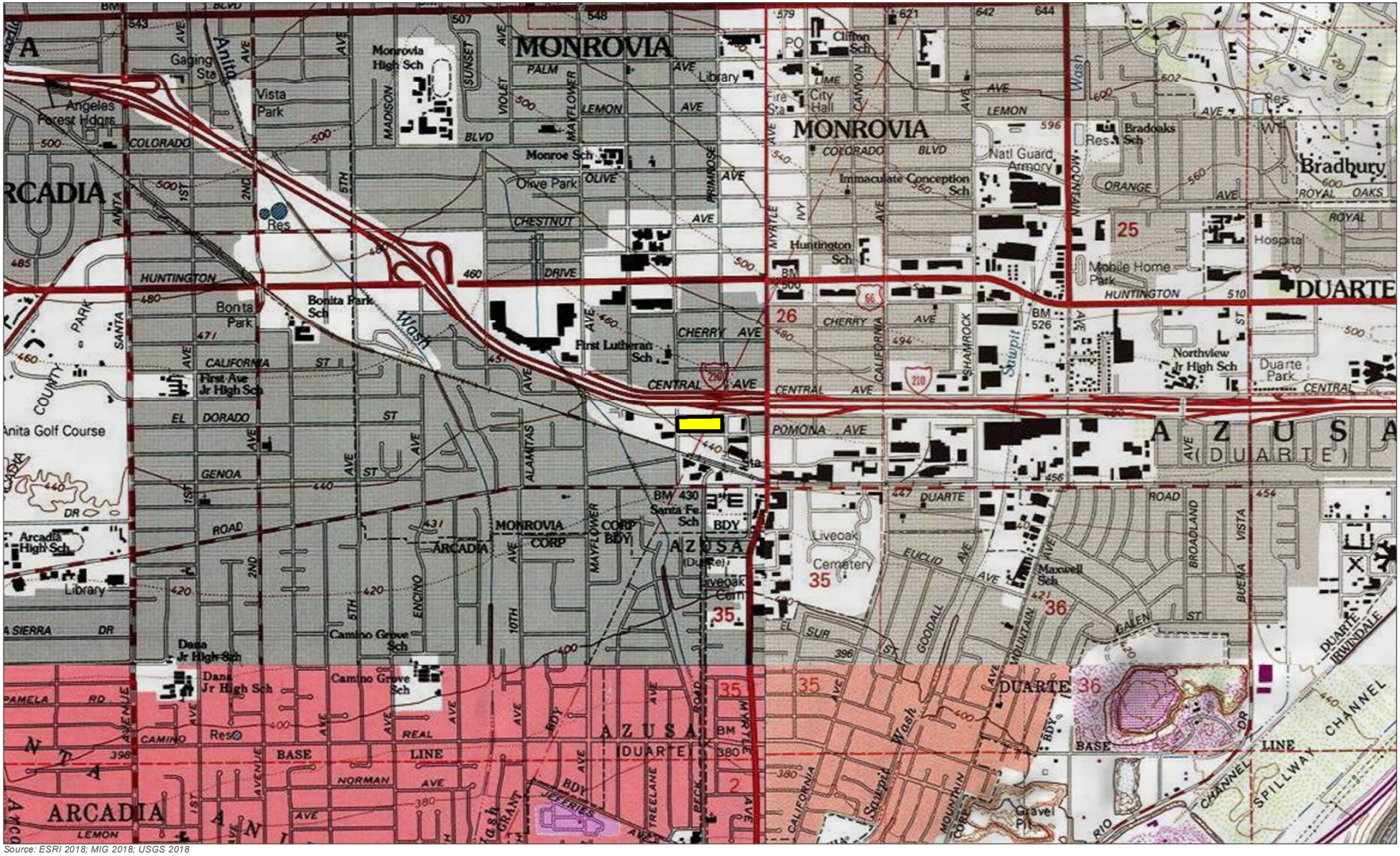

Figure 2 USGS Topographic Map

Arroyo at Monrovia Station Specific Plan - Monrovia, Los Angeles County, CA

MIG

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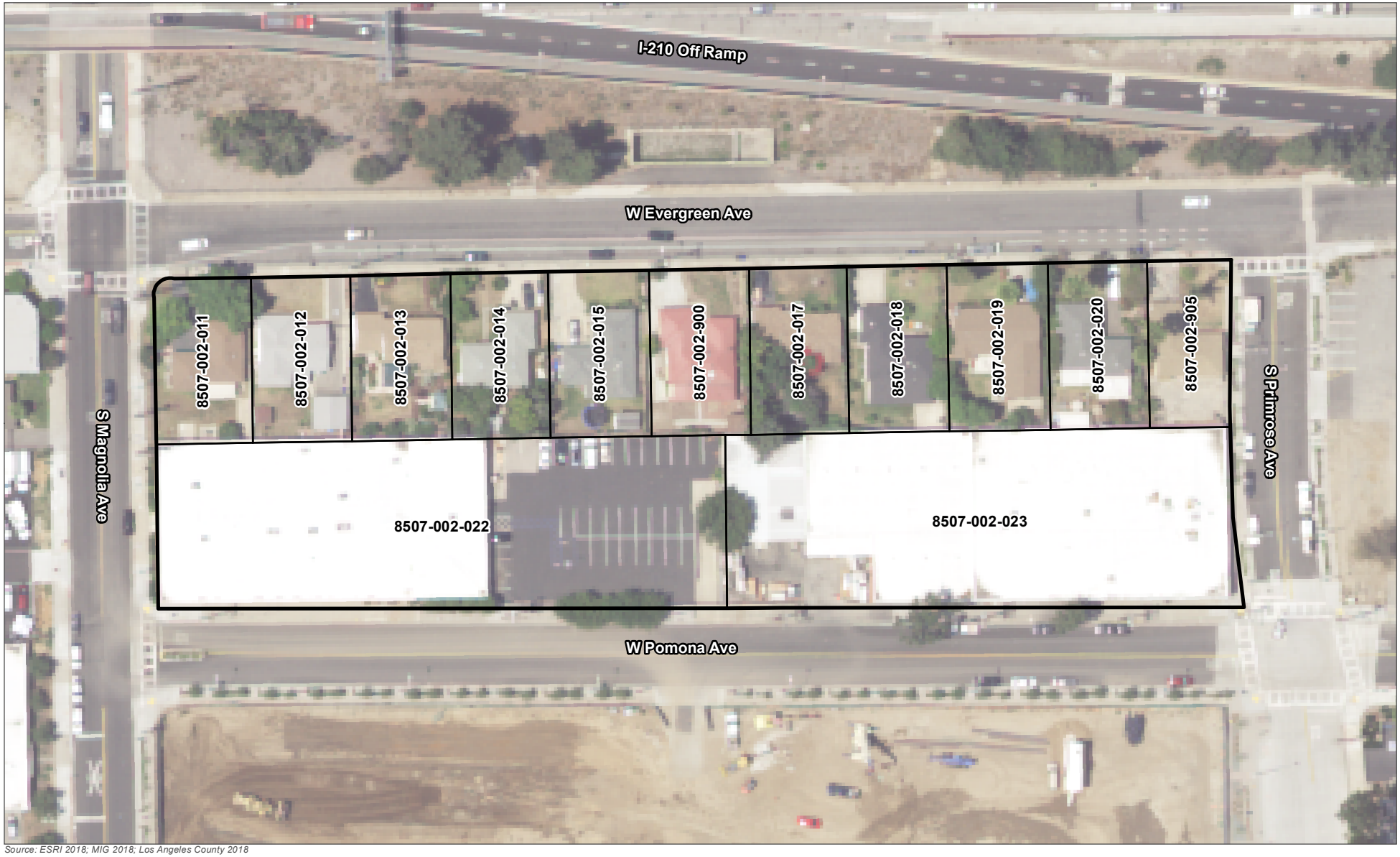

Source: ESRI 2018; MIG 2018; Los Angeles County 2018

Project Boundary: 3.06 ac
Parcels

0 50 100 200 Feet

Figure 3 Study Area

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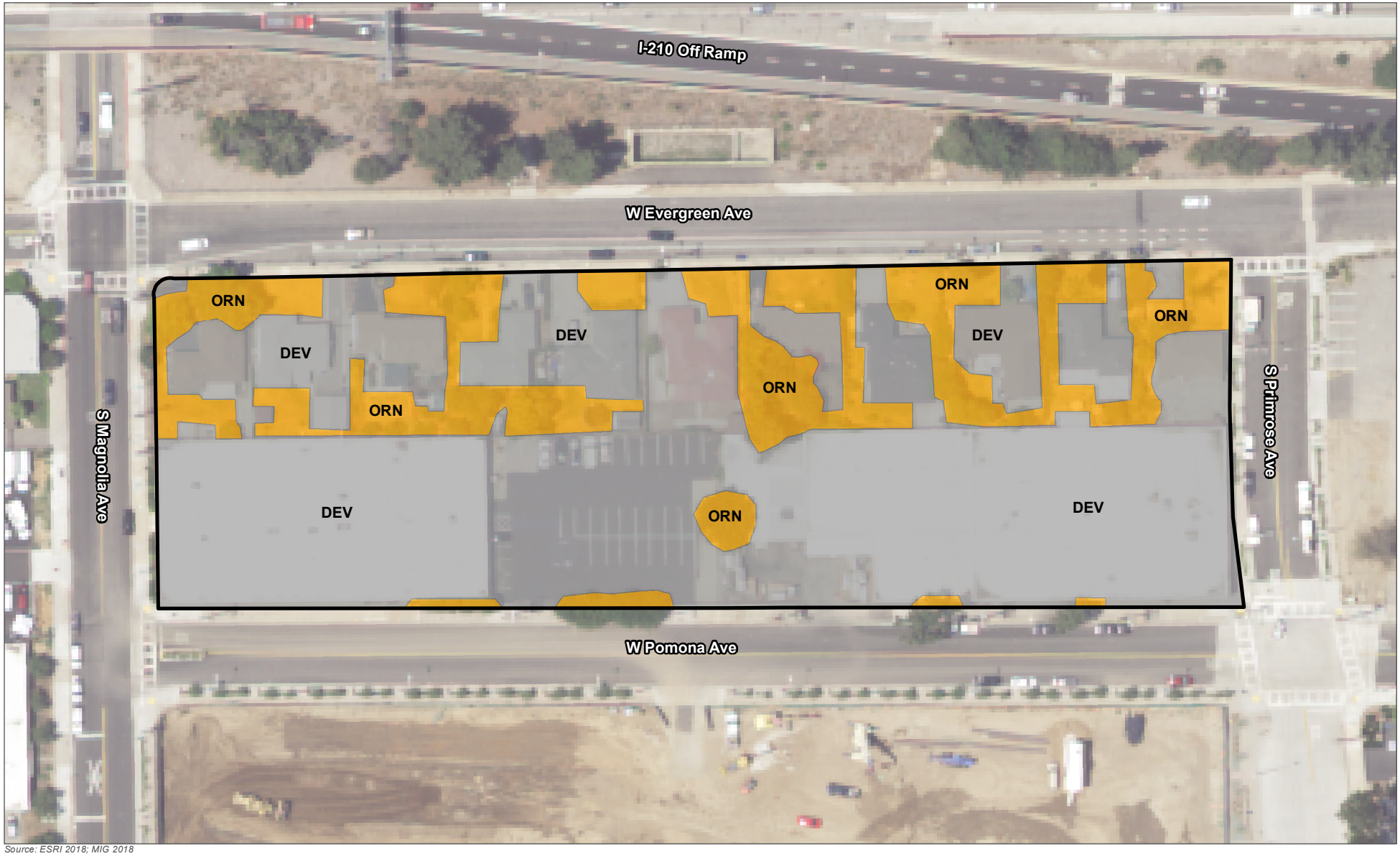

Source: ESRI 2018; MIG 2018

Project Boundary: 3.06 ac

Vegetation Community

Developed (DEV): 2.34 ac

Ornamental (ORN): 0.72 ac

0 50 100 200 Feet

N

Figure 4 Biological Resources Map

Arroyo at Monrovia Station Specific Plan - Monrovia, Los Angeles County, CA

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PHOTOGRAPH 1 - A series of large buildings occupy the southern half of the Project Site.

PHOTOGRAPH 2 - The northern half of the Project Site contains single family homes with ornamental plantings.

Figure 5 Current Project Site Photographs

Arroyo at Monrovia Station Project Site - Monrovia, Los Angeles County, CA

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APPENDICES

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Appendix A
Special-Status Plant Species with Potential to Occur on the Project Site

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Appendix A: Special-Status Plant Species with Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
DICOTS						
slender silver moss *Anomobryum julaceum*	--	--	4.2	Occurs in damp rock and soil on rocky outcrops, usually on roadcuts; occurs in broadleafed upland forest, lower montane coniferous forest, and North Coast coniferous forest	100-1000 m; moss	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Braunton's milk-vetch *Astragalus brauntonii*	FE	--	1B.1	Occurs in recently burned or disturbed areas, usually in sandstone with carbonate layers; occurs in chaparral, coastal scrub, valley grassland, or foothill grassland	4-640 m; Perennial herb; Blooms January to August	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Davidson's saltscale *Atriplex serenana var. davidsonii*	--	--	1B.2	Occurs in alkaline coastal bluff scrub or coastal scrub	10-200 m; Annual herb; Blooms April to October	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Nevin's barberry *Berberis nevinii*	FE	SE	1B.1	Occurs in chaparral, cismontane woodland, coastal scrub, riparian scrun and on steep, north-facing slopes or in low grade sandy washes.	290-1,575 m; Shrub; Blooms March to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.

[1] The potential for occurrence is based on occurrences recorded in the CNDDB, knowledge of species requirements, and site inspections during 2018 field surveys

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
Mt. Gleason paintbrush *Castilleja gleasoni*	--	--	1B.2	Occurs in granitic habitats, including: chaparral, lower montane coniferous forest, pinyon woodland, and juniper woodland	1160-2170 m; Perennial hemiparasitic herb; Blooms May to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
slender mariposa-lily *Calochortus clavatus var. gracilis*	--	--	1B.2	Occurs in chaparral, coastal scrub, valley, and foothill grassland. Found in shaded foothill canyons; often on grassy slopes within other habitat.	310 to 1,620 m; Perennial herb (bulb); Blooms March to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Palmer's mariposa-lily *Calochortus palmeri var. palmeri*	--	--	1B.2	Occurs in chaparral, lower montane coniferous forest, meadows, and seeps	710-2390 m; Perennial bulbiferous herb; Blooms April to July	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Plummer's mariposa-lily *Calochortus plummerae*	--	--	4.2	Occurs in coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, and lower montane coniferous forest. Found on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire.	140-1,920 m; Perennial herb (bulb); Blooms May to July	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
alkali mariposa-lily *Calochorus striatus*	--	--	1B.2	Occurs in alkaline and mesic habitats, including: chaparral, chenopod scrub, Mojavean desert scrub, meadows, and seeps	70-1595 m; Perennial bulbiferous herb; Blooms April to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
Intermediate mariposa-lily *Calochortus weedii var. intermedius*	--	--	1B.2	Occurs in coastal scrub, chaparral, valley and foothill grassland. Found in dry, rocky open slopes and rock outcrops.	17-1,260 m; Perennial herb (bulb); Blooms May to July	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
southern tarplant *Centromadia parry ssp. australis*	--	--	1B.1	Found on the margins of marshes and swamps, is vernally mesic in valley and foothill grasslands, and occurs in vernal pools	0-480 m; Annual herb; Blooms May to November	**Not Expected.** There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Smooth tarplant *Centromadia pungens* ssp. *laevis*	--	--	1B.1	Found in valley and foothill grassland, chenopod scrub, meadows, playas, riparian woodland. Occurs in alkali meadows, alkali scrub, and also in disturbed places.	0-640 m; Annual herb; Blooms April to September	**Not Expected.** There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Parry's spineflower *Chorizanthe parryi* var. *parryi*	--	--	1B.1	Occurs in coastal scrub, chaparral, cismontane woodland, valley, and foothill grassland. Found in dry slopes and flats; sometimes at interface of two vegetation types, such as chaparral and oak woodland; dry, sandy soils.	225-1,220 m; Annual herb; Blooms April to June	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
California saw-grass *Cladium californicum*	--	--	2B.2	Occurs in meadows and seeps, marshes and swamps (alkaline or freshwater). Found in freshwater or alkaline moist habitats.	-24 to 1,810 m; Perennial grasslike herb; Blooms June to September	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
Peruvian dodder *Cuscuta obtusiflora var. glandulosa*	--	--	2B.2	Occurs in freshwater marshes and swamps	15-280 m; Annual vine; Blooms July to October	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
Slender-horned spineflower *Dodecahema leptoceras*	FE	SE	1B.1	Occurs in chaparral, cismontane woodland, coastal scrub (alluvial fan sage scrub). Found in flood deposited terraces and washes; associates include *Encelia, Dalea*, and *Lepidospartum*. Sandy soils.	200-760 m; Annual herb; Blooms April to June	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey; however, focused surveys were not conducted. The species is not expected to be found on the Project Site.
San Gabriel River dudleya *Dudleya cymosa ssp. crebrifolia*	--	--	1B.2	Occurs in granitic chaparral	275-457 m; Perennial herb; Blooms April to July	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
San Gabriel Mountains dudleya *Dudleya densiflora*	--	--	1B.1	Occurs in granitic cliffs and canyon walls, also in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland	244-610 m; Perennial herb; Blooms March to June	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
many-stemmed dudleya *Dudleya multicaulis*	--	--	1B.2	Occurs in chaparral, coastal scrub, valley and foothill grassland. Found in heavy, often clayey soils or grassy slopes.	20-1,000 m; Perennial herb; Blooms April to July	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
San Gabriel bedstraw *Galium grande*	--	--	1B.2	Occurs in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forests	425-1500 m; Perennial deciduous shrub; Blooms January to July	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Los Angeles sunflower *Helianthus nuttallii ssp. parishii*	--	--	1A	Occurs in salt or freshwater marshes and swamps	10-1525 m; Perennial rhizomatous herb; Blooms August-October	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Mesa horkelia *Horkelia cuneata* var. *puberula*	--	--	1B.1	Occurs in chaparral, cismontane woodland, coastal scrub. Found on sandy or gravelly sites.	70-810 m; Perennial herb; Blooms February to July	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
California satintail *Imperata brevifolia*	--	--	2B.1	Occurs in chaparral, coastal scrub, Mojavean desert scrub, meadows, seeps (especially alkali), and riparian scrub	0-1215 m; Perennial rhizomatous herb; Blooms September to May	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	--	--	1B.1	Occurs in coastal salt marshes, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands.	1-1,200 m; Annual herb; Blooms February to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	--	--	4.3	Occurs in chaparral, coastal scrub. Found on dry soils and shrubland.	1-885 m; Annual herb; Blooms January to July	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Davidson's bush-mallow *Malacothamnus davidsonii*	--	--	1B.2	Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland	185-1140 m; Perennial deciduous shrub; Blooms June through January	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
California muhly *Muhlenbergia californica*	--	--	4.3	Occurs in coastal scrub, chaparral, lower montane coniferous forest, meadows and seeps. Usually found near streams or seeps.	440 to 2,380 m; Perennial grass (rhizomatus); Blooms June to September	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Prostrate vernal pool navarretia *Navarretia prostrata*	--	--	1B.1	Occurs in coastal scrub, valley and foothill grassland, vernal pools, meadows, and seeps. Found on alkaline soils in grasslands, or in vernal pools. Occurs on mesic and alkaline sites.	20-640 m; Annual herb; Blooms April to July	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Robbins' nemacladus *Nemacladus secundiflorus var. robbinsii*	--	--	1B.2	Occurs in openings in chaparral, valley grasslands, and foothill grasslands	350-1700 m; Annual herb; Blooms April to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
Short-joint beavertail *Opuntia basilaris var. brachyclada*	--	--	1B.2	Occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland. Found in sandy soil or coarse, granitic loam.	750-1,900 m; Shrub (stem succulent); Blooms April to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Brand's star phacelia *Phacelia stellaris*	--	--	1B.1	Occurs in coastal scrub and coastal dunes. Found in open areas.	1-400 m; Annual herb, Blooms March to June	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
White rabbit-tobacco *Pseudognaphalium leucocephalum*	--	--	2B.2	Occurs in riparian woodland, cismontane woodland, coastal scrub, and chaparral. Found on sandy and gravelly sites.	14-1,400 m; Perennial herb; Blooms August to November	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
Parish's gooseberry *Ribes divaricatus var. parishii*	--	--	1A	Occurs in riparian woodland	65-300m; Perennial deciduous shrub; Blooms February to April	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
Sanford's arrowhead *Sagittaria sanfordii*	--	--	1B.2	Occurs in marshes and swamps. Found in standing or slow-moving freshwater ponds, marshes, and ditches.	7 to 1,270 m; Perennial herb (rhizomatus); Blooms May to October	**Not Expected.** There are no recent known records of occurrence in the vicinity of the project (within 5 miles). There is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
southern mountains skullcap *Scutellaria bolanderi ssp. austromontana*	--	--	1B.2	Occurs in chaparral, cismontane woodland; and lower montane coniferous forest	425-2000m; Perennial rhizomatous herb; Blooms June to August	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
Salt Spring checkerbloom *Sidalcea neomexicana*	--	--	2B.2	Occurs on playas, chaparral, coastal scrub, lower montane coniferous forest, and Mojavean desert scrub. Found in alkali springs and marshes.	0-1,390; Perennial herb; Blooms March to June	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Prairie wedge grass *Sphenopholis obtusata*	--	--	2B.2	Occurs in cismontane woodland, meadows, and seeps. Found in open moist sites, along rivers and springs, alkaline desert seeps.	240 to 2,870 m; Perennial grass; Blooms August to July	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
San Bernardino aster *Symphyotrichum defoliatum*	--	--	1B.2	Occurs in meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, and grassland. Found in vernally mesic grassland or near ditches, streams and springs; disturbed areas.	2-2,040 m; Perennial herb; Blooms July to November	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). Not observed during October 2018 field survey; however, focused surveys were not conducted. The species is not expected to be found on the Project Site.
Greata's aster *Symphyotrichum greatae*	--	--	1B.3	Occurs in chaparral, cismontane woodland, broadleaved upland forest, lower montane coniferous forest, and riparian woodland. Found in mesic canyons.	310 to 2,040 m; Perennial herb; Blooms June to October	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

Species	Status			Habitat Requirements	Elevation Range; Life Form; Blooming Period	Potential Occurrence in the Project Area[1]
	Federal	State	CNPS			
Sonoran maiden fern *Thelypteris puberula var. sonorensis*	--	--	2B.2	Occurs in meadows, seeps, and along streams	50-610 m; Perennial rhizomatous herb; Blooms January - September	**Not Expected.** There are records of occurrences of this species in the vicinity of the project (within 5 miles), however there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Rigid fringepod *Thysanocarpus rigidus*	--	--	1B.2	Occurs in pinyon and juniper woodland. Found on dry, rocky slopes and ridges of oak and pine woodland in arid mountain ranges.	425-2,165 m; Annual herb; Blooms February to May	**Not Expected.** There is no suitable habitat present on the Project Site. There are no recent known records of occurrence in the vicinity of the project (within 5 miles). The species is not expected to be found on the Project Site.
Plant Communities						
Canyon Live Oak Ravine Forest						This plant community is not present on the Project Site.
California Walnut Woodland						This plant community is not present on the Project Site.
Coastal and Valley Freshwater Marsh						This plant community is not present on the Project Site.
Riversidean Alluvial Fan Sage Scrub						This plant community is not present on the Project Site.
Southern Coast Live Oak Riparian Forest						This plant community is not present on the Project Site.
Southern Cottonwood Willow Riparian Forest						This plant community is not present on the Project Site.
Southern Riparian Forest						This plant community is not present on the Project Site.
Southern Sycamore Alder Riparian Woodland						This plant community is not present on the Project Site.
Southern Willow Scrub						This plant community is not present on the Project Site.

Appendix A: Special Status Plant Species With Potential to Occur on the Project Site.

STATUS KEY:

Federal

FE: Federally-listed Endangered
FT: Federally-listed Threatened

State

CE: California-listed Endangered
CT: California-listed Threatened

California Native Plant Society (CNPS)**:**

1B: Plants listed as rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which we need more information
4: Plants of Limited Distribution, a watch list

CNPS added a decimal threat rank to the List rank to parallel that used by the CNDDB. This extension replaces the E (Endangerment) value from the R-E-D Code. CNPS ranks therefore read like this: 1B.1, 1B.2, etc. Threat code extensions and their meanings are as follows:

.1 – Seriously endangered in California (over 80% of occurrences threatened / high degree of immediacy of threat)
.2 – Fairly endangered in California (20-80% occurrences threatened)
.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)

SOURCES:

1 Calflora and the California Native Plant Society Rare and Endangered Plant Inventory was used to identify preferred habitat for each species
2 CNDDB records are from CNDDB 2018

Appendix B
Special-Status Wildlife Species with Potential to Occur on the Project Site

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Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
INVERTEBRATES				
crotch bumble bee *Bombus crotchii*	--	--	Found along coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.*	**Not Expected.** There is no suitable food plant or habitat located on the Project Site. There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
FISHES				
Santa Ana sucker *Catostomus santaanae*	FT	--	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	**Not Expected.** No water bodies are present on the Project Site; therefore, there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
Arroyo chub *Gila orcuttii*	--	CSC	Native to streams from Malibu Creek to San Luis Rey River basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mohave and San Diego river basins. Inhabits slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	**Not Expected.** No water bodies are present on the Project Site. The species is not expected to be found on the Project Site.
Santa Ana speckled dace *Rhinichthys osculus ssp. 3*	--	CSC	Inhabits headwaters of the Santa Ana and San Gabriel rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temps of 17-20 Celsius. Usually inhabits shallow cobble and gravel riffles.	**Not Expected.** No water bodies are present on the Project Site; therefore, there is no suitable habitat present on the Project Site. The species is not expected to be found on the Project Site.
AMPHIBIANS				
Arroyo toad *Anaxyrus californicus*	FE	CSC	Found in semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, and desert washes. Inhabits rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**Not Expected.** There is no suitable habitat located on the Project Site. There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Foothill yellow-legged frog *Rana boylii*	--	SCT, CSC	Found in rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Not Expected.** There is no suitable habitat located on the Project Site. There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
southern mountain yellow-legged frog *Rana muscosa*	FE	SE, CSC	Species always encountered within a few feet of water. Tadpoles may require 2 to 4 years to complete their aquatic development.	**Not Expected.** There is no suitable habitat including water bodies located on the Project Site. The only occurrences within 5 miles of the Project Site are listed as extirpated or possibly extirpated on CNDDB due to surrounding urbanization. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
coast range newt *Taricha torosa*	--	CSC	Found in Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats and will migrate over one kilometer to breed in ponds, reservoirs, and slow moving streams.	**Not Expected.** There is no suitable habitat including water bodies located on the Project Site. One occurrence nearly 5 miles to the north is within rural hills and the species has likely been excluded from the region due to urbanization. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
REPTILES				
silvery legless lizard *Anniella pulchra pulchra*	--	CSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. they prefer soils with a high moisture content.	**Not Expected.** There is no suitable habitat located on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Southern California legless lizard *Anniella stebbinsi*	--	CSC	Inhabits coastal sand dunes, sandy washes, alluvial fans—generally in sandy soils with vegetative cover.	**Not Expected.** There is no suitable habitat located on the Project Site. There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
California glossy snake *Arizona elegans occidentalis*	--	CSC	Inhabits arid scrub, rocky washes, grasslands, chaparral.	**Not Expected.** There is no suitable habitat located on the Project Site. There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
coastal whiptail *Aspidoscelis tigris stejnegeri*	--	--	Found in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	**Not Expected.** There is no suitable habitat located on the Project Site. One occurrence within the vicinity (within 5 miles) of the Project Site is located in a flood control basin and is highly unlikely to disperse into an already urbanized site like that of the Project Site. Not observed during April 2016 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
western pond turtle *Emys marmorata*	--	CSC	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and sandy banks or open grassy fields up to 0.5 kilometers from the water's edge for egg-laying.	**Not Expected.** There is no suitable habitat located on the Project Site. There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles). Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
coast horned lizard *Phrynosoma blainvillii*	--	CSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Requires open areas for sunning, bushes for cover, patches of loose soil for refuge, and abundant supply of insects.	**Not Expected.** There is no suitable habitat located on the Project Site. One occurrence within the vicinity (within 5 miles) of the Project Site is located in a flood control basin and is highly unlikely to disperse into an already urbanized site like that of the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
two-striped garter snake *Thamnophis hammondii*	--	CSC	Found along coastal California from vicinity of Salinas to northwest Baja California. Inhabits areas from the sea to about 7,000 feet in elevation. Highly aquatic, found in or near permanent fresh water. Often found along streams with rocky beds and riparian growth.	**Not Expected.** There is no suitable habitat including water bodies located on the Project Site. One occurrence nearly 5 miles to the north is within rural hills and the species has likely been excluded from the region due to urbanization. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
BIRDS				
tricolored blackbird *Agelaius tricolor*	--	CSC	Inhabits freshwater marsh, marsh and swamp, swamp, and wetland habitats. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
golden eagle *Aquila chrysaetos*	--	--	Inhabits rolling foothills, mountain areas, sage-juniper flats, and desert. Nesting habitat includes cliff-walled canyons and large trees in open areas.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
burrowing owl *Athene cunicularia*	--	CSC	Inhabits open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel (*Otospermophilius beecheyi*).	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Swainson's hawk *Buteo swainsoni*	--	ST	Occurs in Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland habitats. Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT	SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow (*Salix* sp.) often mixed with cottonwoods (*Populus* sp.), with lower story of blackberry (*Rubus sp.*), nettles (*Urtica sp.*), or wild grape (*Vitis girdiana*).	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Black swift *Cypseloides niger*	--	CSC	Occurs along the coastal belt of Santa Cruz and Monterey counties; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
southwestern willow flycatcher *Empidonax traillii extimus*	FE	SE	Inhabits riparian and wetland thickets, generally of willow, tamarisk, or both, sometimes boxelder or Russian olive.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
American peregrine falcon *Falco peregrinus anatum*	--	FP	Prefers extremely high vertical habitat for nesting (i.e. skyscrapers, clifftops, etc.). More likely to occur in habitat with nearby freshwater sources.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
California condor *Gynogyps californianus*	FE	SE	Prefers chaparral scrub and forested mountains for nesting and is an opportunistic forager over open areas, including grasslands.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
yellow-breasted chat *Icteria virens*	--	CSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape.	**Not Expected.** There is no suitable habitat located on the Project Site. One occurrence within the vicinity (within 5 miles) of the Project Site is located in a flood control basin and is highly unlikely to disperse into an already urbanized site like that of the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
coastal California gnatcatcher *Polioptila californica californica*	FT	CSC	Obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California. Inhabits low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	**Not Expected.** There are recent known records of occurrence in the vicinity of the Project Site (within 5 miles). However, there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
bank swallow *Riparia riparia*	--	ST	Inhabits low areas along waterways (riparian, freshwater reservoirs, or coastal). Nests in colonies on vertical cliff habitat.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
American yellow warbler *Setophaga petechia*	--	CSC	Occurs in riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
least Bell's vireo *Vireo bellii pusillus*	FE	SE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms below 2,000 feet. Nests placed along margins of bushes or on twigs projecting into pathways (usually *salix*, *baccharis*, *Prosopis*).	**Not Expected.** There are recent known records of occurrence in the vicinity of the Project Site (within 5 miles). However, there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
MAMMALS				

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
pallid bat *Antrozous pallidus*	--	CSC	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Not Expected.** There are historic records of occurrence in the vicinity of the Project Site (within 5 miles). However, there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
Townsend's big-eared bat *Corynorhinus townsendii*	--	CSC	Occurs through North America in a wide variety of habitats including coniferous forests, mixed wood forests, deserts, prairies, riparian, agricultural, and coastal habitats.	**Not Expected.** There are recent known records of occurrence in the vicinity of the Project Site (within 5 miles). However, there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
western mastiff bat *Eumops perotis californicus*	--	CSC	Inhabits many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, valley and foothill grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Not Expected.** There are historic records of occurrence in the vicinity of the Project Site (within 5 miles). However, there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
silver-haired bat *Lasionycteris noctivagans*	--	--	Occurs throughout most of the United States and into parts of Canada and Mexico, primarily associated with coniferous and mixed coniferous forests, but seasonally in lower elevation habitats.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
hoary bat *Lasiurus cinereus*	--	--	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Not Expected.** There are historic records of occurrence in the vicinity of the Project Site (within 5 miles). However, there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
western red bat Lasiurus blossevillii	--	CSC	Primarily associated with riparian areas dominated by large tree species, only roosts in tree foliage.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
western yellow bat *Lasiurus xanthinus*	--	CSC	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	--	CSC	Found in intermediate canopy stages of shrub habitats and open shrub/herbaceous and tree/herbaceous edges. Inhabits coastal sage scrub habitats in Southern California.	**Not Expected.** There is no suitable habitat located on the Project Site. One occurrence within the vicinity (within 5 miles) of the Project Site is located in a flood control basin and is highly unlikely to disperse into an already urbanized site like that of the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
fringed myotis *Myotis thysanodes*	--	--	Occurs throughout western North America. This species is more common in oak/pinyon-juniper/ponderosa pine woodlines but less commonly occurs in desert scrub, coniferous forests, grassland, and sage-grass steppe as well.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
long-legged myotis *Myotis volans*	--	--	Occurs throughout western North America, primarily in coniferous forests, but seasonally within riparian and desert habitats.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
lodgepole chipmunk *Neotamia speciosus speciosus*	--	--	Isolated populations occur in Southern California mountains in mixed wood and chaparral habitat.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
pocketed free-tailed bat *Nyctinomops femorosaccus*	--	CSC	Inhabits a variety of arid areas in Southern California, including pine-juniper woodlands, desert scrub, palm oasis, desert wash, and desert riparian. Prefers rocky areas with high cliffs.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

Species	Status		Habitat Requirements	Potential for Occurrence
	Federal	State		
big free-tailed bat *Nyctinomops macrotis*	--	CSC	Occurs in low-lying arid areas in Southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
southern grasshopper mouse *Onychomys torridus ramona*	--	CSC	Occurs in arid deserts and desert scrub habitat. Prey is almost exclusively arthropods.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
desert bighorn sheep *Ovis canadensis nelsoni*	--	--	Widely distributed from the White Mountains in Mono County to the Chocolate Mountains in Imperial County. Occurs in open, rocky, steep areas with available water and herbaceous forage.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.
American badger *Taxidea taxus*	--	CSC	Prefers vast, wide-open grassland habitat with abundant sources of burrowing mammal prey.	**Not Expected.** There are no recent known records of occurrence in the vicinity of the Project Site (within 5 miles) and there is no suitable habitat present on the Project Site. Not observed during October 2018 field survey. The species is not expected to be found on the Project Site.

Appendix B: Special-Status Wildlife Species with Potential to Occur on the Project Site**.**

KEY:

(nesting and/or wintering) = For most taxa, the CNDDB is interested in information that indicates the presence of a resident population. For some species (primarily birds), the CNDDB only tracks certain parts of the species range or life history (e.g., nesting locations).

STATUS:

Federal

FE: Federally-listed Endangered
FT: Federally-listed Threatened
FD: Federally-delisted

State

SE: State-listed Endangered
ST: State-listed Threatened
CSC: State Species of Special Concern
FP: Fully-Protected

SOURCES:

1 California Natural Diversity Database (CNDDB), BIOS 5 Data Viewer, and NatureServe.org Explorer were used to identify preferred habitat for each species
2 CNDDB records are from CNDDB 2018

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Appendix C
State and Federal Database Search Results for Special-Status Plant and Wildlife Species

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CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

Plant List

78 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], Found in Quads 3411832, 3411831, 3411738, 3411822, 3411821, 3411728, 3411812 3411811 and 3411718;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthoscyphus parishii var. parishii	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	4.2	S3S4	G4?T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss		4.2	S2	G5?
Arctostaphylos glandulosa ssp. gabrielensis	San Gabriel manzanita	Ericaceae	perennial evergreen shrub	Mar	1B.2	S3	G5T3
Arctostaphylos parryana ssp. tumescens	interior manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	4.3	S3S4	G4T3T4
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	4.2	S4	G4
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
Astragalus pulsiferae var. coronensis	Modoc Plateau milk-vetch	Fabaceae	perennial herb	May-Jul	4.2	S3	G4T3
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1
Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calochortus clavatus var. gracilis	slender mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun(Nov)	1B.2	S2S3	G4T2T3
Calochortus palmeri var. palmeri	Palmer's mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	1B.2	S2	G3T2
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
Calochortus striatus	alkali mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2S3	G3?
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
Castilleja gleasoni	Mt. Gleason paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Jun(Sep)	1B.2	S2	G2
Castilleja plagiotoma	Mojave paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	4.3	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	Apr-Sep	1B.1	S2	G3G4T2
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
Chorizanthe parryi var. parryi	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S2	G3T2
Cladium californicum	California sawgrass	Cyperaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G4
Clinopodium mimuloides	monkey-flower savory	Lamiaceae	perennial herb	Jun-Oct	4.2	S3	G3
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4T5
Diplacus johnstonii	Johnston's monkeyflower	Phrymaceae	annual herb	(Apr)May-Aug	4.3	S4	G4
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
Dudleya cymosa ssp. crebrifolia	San Gabriel River dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G5T2
Dudleya densiflora	San Gabriel Mountains dudleya	Crassulaceae	perennial herb	Mar-Jun	1B.1	S2	G2
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	4.3	S3	G4

Frasera neglecta	pine green-gentian	Gentianaceae	perennial herb	May-Jul	4.3	S4	G4
Galium angustifolium ssp. gabrielense	San Antonio Canyon bedstraw	Rubiaceae	perennial herb	Apr-Aug	4.3	S3	G5T3
Galium grande	San Gabriel bedstraw	Rubiaceae	perennial deciduous shrub	Jan-Jul	1B.2	S1	G1
Galium jepsonii	Jepson's bedstraw	Rubiaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G3
Galium johnstonii	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	4.3	S4	G4
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1A	SH	G5TH
Heuchera caespitosa	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	4.3	S3	G3
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul(Sep)	1B.1	S1	G4T1
Hulsea vestita ssp. gabrielensis	San Gabriel Mountains sunflower	Asteraceae	perennial herb	May-Jul	4.3	S3	G5T3
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	2B.1	S3	G4
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S3	G3
Juncus duranii	Duran's rush	Juncaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Lepechinia fragrans	fragrant pitcher sage	Lamiaceae	perennial shrub	Mar-Oct	4.2	S3	G3
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	4.2	S4?	G4T4?
Lilium parryi	lemon lily	Liliaceae	perennial bulbiferous herb	Jul-Aug	1B.2	S3	G3
Linanthus concinnus	San Gabriel linanthus	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2
Linanthus orcuttii	Orcutt's linanthus	Polemoniaceae	annual herb	May-Jun	1B.3	S2	G3
Lupinus albifrons var. johnstonii	interior bush lupine	Fabaceae	perennial shrub	May-Jul	4.3	S4	G4T4
Lupinus elatus	silky lupine	Fabaceae	perennial herb	(May)Jun-Aug	4.3	S4	G4
Lupinus peirsonii	Peirson's lupine	Fabaceae	perennial herb	Apr-Jun	1B.3	S3	G3
Malacothamnus davidsonii	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	1B.2	S2	G2
Monardella australis ssp. cinerea	gray monardella	Lamiaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G4T3
Muhlenbergia californica	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	4.3	S4	G4
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Opuntia basilaris var. brachyclada	short-joint beavertail	Cactaceae	perennial stem succulent	Apr-Jun(Aug)	1B.2	S3	G5T3
Oreonana vestita	woolly mountain-parsley	Apiaceae	perennial herb	Mar-Sep	1B.3	S3	G3
Orobanche valida ssp. valida	Rock Creek broomrape	Orobanchaceae	perennial herb (parasitic)	May-Sep	1B.2	S2	G4T2
Packera ionophylla	Tehachapi ragwort	Asteraceae	perennial herb	Jun-Jul	4.3	S4	G4
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
Phacelia mohavensis	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	4.3	S4	G4Q
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
Pickeringia montana var. tomentosa	woolly chaparral-pea	Fabaceae	evergreen shrub	May-Aug	4.3	S3S4	G5T3T4
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
Quercus durata var. gabrielensis	San Gabriel oak	Fagaceae	perennial evergreen shrub	Apr-May	4.2	S3	G4T3
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	4.2	S3	G3
Ribes divaricatum var. parishii	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	1A	SX	G5TX
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	4.2	S4	G4

Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	4.3	S4	G4
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Aug	1B.2	S3	G4T3
Senecio astephanus	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	4.3	S3	G3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Sidotheca caryophylloides	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep(Oct)	4.3	S4	G4
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2
Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	1B.3	S2	G2
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	2B.2	S2	G5T3

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 06 November 2018].

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rareplants@cnps.org

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Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Mt. Wilson (3411821) OR Condor Peak (3411832) OR Chilao Flat (3411831) OR Waterman Mtn. (3411738) OR Pasadena (3411822) OR Azusa (3411728) OR Los Angeles (3411812) OR El Monte (3411811) OR Baldwin Park (3411718))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate OR All CNDDB element occurrences OR Delisted) OR State Listing Status IS (Endangered OR Threatened OR Rare OR All CNDDB element occurrences OR Delisted OR Candidate Endangered OR Candidate Threatened))
 AND CNPS List IS (1A OR 1B OR 1B.1 OR 1B.2 OR 1B.3 OR 2A OR 2B OR 2B.1 OR 2B.2 OR 2B.3 OR 3 OR 3.1 OR 3.2 OR 3.3 OR 4 OR 4.1 OR 4.2 OR 4.3)

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
NBMUS80010	***Anomobryum julaceum*** slender silver moss	None	None	G5?	S2	4.2
PDAPI1G030	***Oreonana vestita*** woolly mountain-parsley	None	None	G3	S3	1B.3
PDAST440C0	***Pseudognaphalium leucocephalum*** white rabbit-tobacco	None	None	G4	S2	2B.2
PDAST4N102	***Helianthus nuttallii ssp. parishii*** Los Angeles sunflower	None	None	G5TH	SH	1A
PDAST4R0P4	***Centromadia parryi ssp. australis*** southern tarplant	None	None	G3T2	S2	1B.1
PDAST4R0R4	***Centromadia pungens ssp. laevis*** smooth tarplant	None	None	G3G4T2	S2	1B.1
PDAST5L0A1	***Lasthenia glabrata ssp. coulteri*** Coulter's goldfields	None	None	G4T2	S2	1B.1
PDASTE80C0	***Symphyotrichum defoliatum*** San Bernardino aster	None	None	G2	S2	1B.2
PDASTE80U0	***Symphyotrichum greatae*** Greata's aster	None	None	G2	S2	1B.3
PDBER060A0	***Berberis nevinii*** Nevin's barberry	Endangered	Endangered	G1	S1	1B.1
PDBRA1M114	***Lepidium virginicum var. robinsonii*** Robinson's pepper-grass	None	None	G5T3	S3	4.3
PDCAC0D053	***Opuntia basilaris var. brachyclada*** short-joint beavertail	None	None	G5T3	S3	1B.2
PDCAM0F0B2	***Nemacladus secundiflorus var. robbinsii*** Robbins' nemacladus	None	None	G3T2	S2	1B.2
PDCHE041T1	***Atriplex serenana var. davidsonii*** Davidson's saltscale	None	None	G5T1	S1	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDCRA040A8	***Dudleya cymosa ssp. crebrifolia*** San Gabriel River dudleya	None	None	G5T2	S2	1B.2
PDCRA040B0	***Dudleya densiflora*** San Gabriel Mountains dudleya	None	None	G2	S2	1B.1
PDCRA040H0	***Dudleya multicaulis*** many-stemmed dudleya	None	None	G2	S2	1B.2
PDCUS01111	***Cuscuta obtusiflora var. glandulosa*** Peruvian dodder	None	None	G5T4T5	SH	2B.2
PDERI042P0	***Arctostaphylos glandulosa ssp. gabrielensis*** San Gabriel manzanita	None	None	G5T3	S3	1B.2
PDFAB0F1G0	***Astragalus brauntonii*** Braunton's milk-vetch	Endangered	None	G2	S2	1B.1
PDFAB2B330	***Lupinus peirsonii*** Peirson's lupine	None	None	G3	S3	1B.3
PDGRO020F3	***Ribes divaricatum var. parishii*** Parish's gooseberry	None	None	G5TX	SX	1A
PDHYD0C510	***Phacelia stellaris*** Brand's star phacelia	None	None	G1	S1	1B.1
PDLAM1U0A1	***Scutellaria bolanderi ssp. austromontana*** southern mountains skullcap	None	None	G4T3	S3	1B.2
PDMAL0Q040	***Malacothamnus davidsonii*** Davidson's bush-mallow	None	None	G2	S2	1B.2
PDMAL110J0	***Sidalcea neomexicana*** salt spring checkerbloom	None	None	G4	S2	2B.2
PDORO040G2	***Orobanche valida ssp. valida*** Rock Creek broomrape	None	None	G4T2	S2	1B.2
PDPGN040J2	***Chorizanthe parryi var. parryi*** Parry's spineflower	None	None	G3T2	S2	1B.1
PDPGN0V010	***Dodecahema leptoceras*** slender-horned spineflower	Endangered	Endangered	G1	S1	1B.1
PDPLM090D0	***Linanthus concinnus*** San Gabriel linanthus	None	None	G2	S2	1B.2
PDPLM0C0Q0	***Navarretia prostrata*** prostrate vernal pool navarretia	None	None	G2	S2	1B.1
PDROS0W045	***Horkelia cuneata var. puberula*** mesa horkelia	None	None	G4T1	S1	1B.1
PDRUB0N0V0	***Galium grande*** San Gabriel bedstraw	None	None	G1	S1	1B.2
PDSCR0D140	***Castilleja gleasoni*** Mt. Gleason paintbrush	None	Rare	G2	S2	1B.2
PMCYP04010	***Cladium californicum*** California saw-grass	None	None	G4	S2	2B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PMLIL0D096	***Calochortus clavatus var. gracilis*** slender mariposa-lily	None	None	G4T2T3	S2S3	1B.2
PMLIL0D122	***Calochortus palmeri var. palmeri*** Palmer's mariposa-lily	None	None	G3T2	S2	1B.2
PMLIL0D150	***Calochortus plummerae*** Plummer's mariposa-lily	None	None	G4	S4	4.2
PMLIL0D190	***Calochortus striatus*** alkali mariposa-lily	None	None	G3?	S2S3	1B.2
PMLIL0D1J1	***Calochortus weedii var. intermedius*** intermediate mariposa-lily	None	None	G3G4T2	S2	1B.2
PMLIL1A0J0	***Lilium parryi*** lemon lily	None	None	G3	S3	1B.2
PMPOA3D020	***Imperata brevifolia*** California satintail	None	None	G4	S3	2B.1
PMPOA480A0	***Muhlenbergia californica*** California muhly	None	None	G4	S4	4.3
PPTHE05192	***Thelypteris puberula var. sonorensis*** Sonoran maiden fern	None	None	G5T3	S2	2B.2

Record Count: 44

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Mt. Wilson (3411821) OR Condor Peak (3411832) OR Chilao Flat (3411831) OR Waterman Mtn. (3411738) OR Pasadena (3411822) OR Azusa (3411728) OR Los Angeles (3411812) OR El Monte (3411811) OR Baldwin Park (3411718))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate OR All CNDDB element occurrences OR Delisted) OR State Listing Status IS (Endangered OR Threatened OR Rare OR Delisted OR Candidate Endangered OR Candidate Threatened))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAF02032	***Taricha torosa*** Coast Range newt	None	None	G4	S4	SSC
AAABB01230	***Anaxyrus californicus*** arroyo toad	Endangered	None	G2G3	S2S3	SSC
AAABH01050	***Rana boylii*** foothill yellow-legged frog	None	Candidate Threatened	G3	S3	SSC
AAABH01330	***Rana muscosa*** southern mountain yellow-legged frog	Endangered	Endangered	G1	S1	WL
ABNKC12040	***Accipiter cooperii*** Cooper's hawk	None	None	G5	S4	WL
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S3	
ABNKD06071	***Falco peregrinus anatum*** American peregrine falcon	Delisted	Delisted	G4T4	S3S4	FP
ABNRB02022	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S3	SSC
ABNUA01010	***Cypseloides niger*** black swift	None	None	G4	S2	SSC
ABPAE33043	***Empidonax traillii extimus*** southwestern willow flycatcher	Endangered	Endangered	G5T2	S1	
ABPAU08010	***Riparia riparia*** bank swallow	None	Threatened	G5	S2	
ABPBJ08081	***Polioptila californica californica*** coastal California gnatcatcher	Threatened	None	G4G5T2Q	S2	SSC
ABPBW01114	***Vireo bellii pusillus*** least Bell's vireo	Endangered	Endangered	G5T2	S2	
ABPBX24010	***Icteria virens*** yellow-breasted chat	None	None	G5	S3	SSC
AFCJB13120	***Gila orcuttii*** arroyo chub	None	None	G2	S2	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AFCJB3705K	***Rhinichthys osculus ssp. 3*** Santa Ana speckled dace	None	None	G5T1	S1	SSC
AFCJC02190	***Catostomus santaanae*** Santa Ana sucker	Threatened	None	G1	S1	
AMACC01090	***Myotis thysanodes*** fringed myotis	None	None	G4	S3	
AMACC01110	***Myotis volans*** long-legged myotis	None	None	G5	S3	
AMACC02010	***Lasionycteris noctivagans*** silver-haired bat	None	None	G5	S3S4	
AMACC05030	***Lasiurus cinereus*** hoary bat	None	None	G5	S4	
AMACC05060	***Lasiurus blossevillii*** western red bat	None	None	G5	S3	SSC
AMACC05070	***Lasiurus xanthinus*** western yellow bat	None	None	G5	S3	SSC
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	None	G3G4	S2	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G5	S3	SSC
AMACD02011	***Eumops perotis californicus*** western mastiff bat	None	None	G5T4	S3S4	SSC
AMACD04010	***Nyctinomops femorosaccus*** pocketed free-tailed bat	None	None	G4	S3	SSC
AMACD04020	***Nyctinomops macrotis*** big free-tailed bat	None	None	G5	S3	SSC
AMAEB03051	***Lepus californicus bennettii*** San Diego black-tailed jackrabbit	None	None	G5T3T4	S3S4	SSC
AMAFB02172	***Neotamias speciosus speciosus*** lodgepole chipmunk	None	None	G4T2T3	S2S3	
AMAFF06022	***Onychomys torridus ramona*** southern grasshopper mouse	None	None	G5T3	S3	SSC
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
AMALE04013	***Ovis canadensis nelsoni*** desert bighorn sheep	None	None	G4T4	S3	FP
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARACC01060	***Anniella stebbinsi*** southern California legless lizard	None	None	G3	S3	SSC
ARACF12100	***Phrynosoma blainvillii*** coast horned lizard	None	None	G3G4	S3S4	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ARACJ02143	***Aspidoscelis tigris stejnegeri*** coastal whiptail	None	None	G5T5	S3	SSC
ARADB01017	***Arizona elegans occidentalis*** California glossy snake	None	None	G5T2	S2	SSC
ARADB36160	***Thamnophis hammondii*** two-striped gartersnake	None	None	G4	S3S4	SSC
IIHYM24480	***Bombus crotchii*** Crotch bumble bee	None	None	G3G4	S1S2	

Record Count: 41

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Angeles County, California

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Coastal California Gnatcatcher Polioptila californica californica There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened

Flowering Plants

NAME	STATUS

NOT FOR CONSULTATION

Braunton's Milk-vetch Astragalus brauntonii — Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/5674

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS

NOT FOR CONSULTATION

ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Costa's Hummingbird Calypte costae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Lawrence's Goldfinch Carduelis lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Lewis's Woodpecker Melanerpes lewis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere

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Marbled Godwit Limosa fedoa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Song Sparrow Melospiza melodia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
Spotted Towhee Pipilo maculatus clementae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▮)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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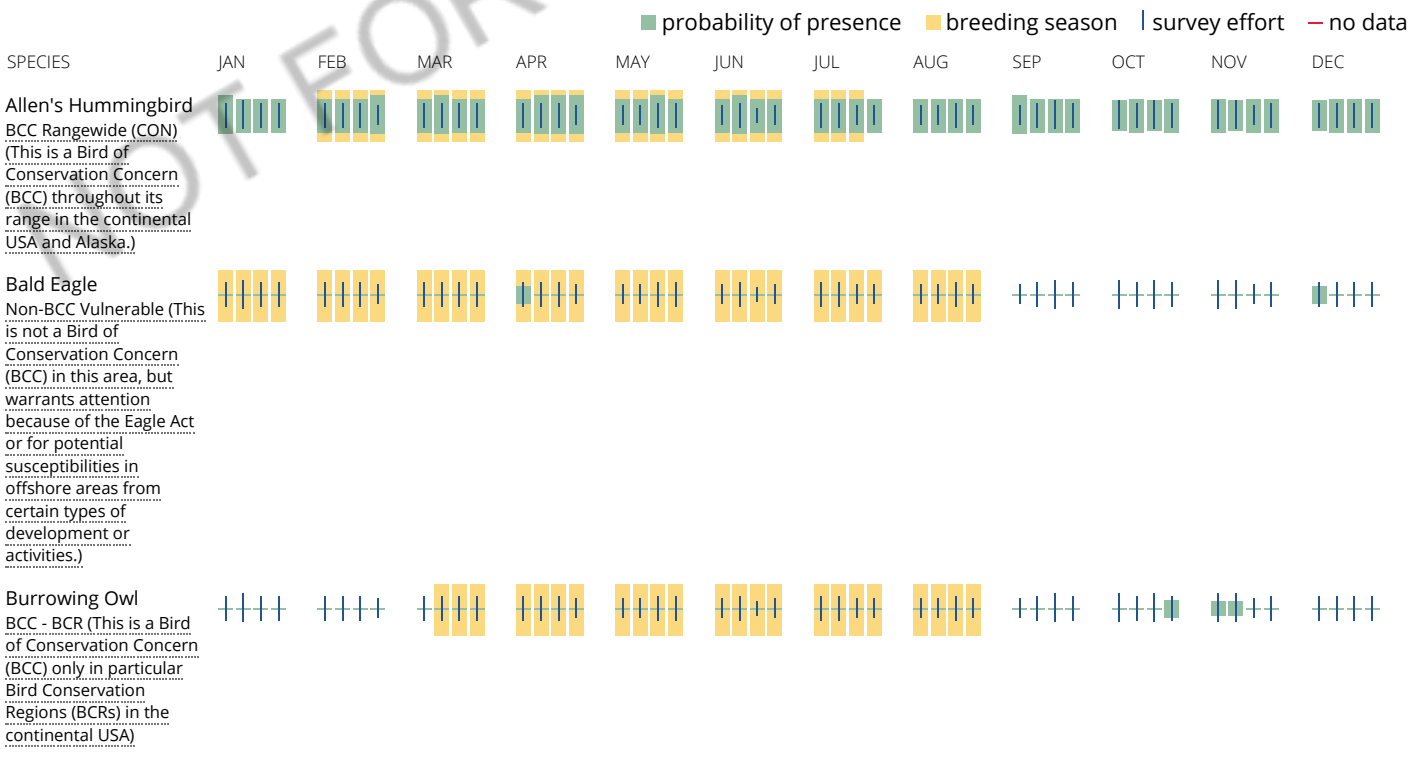

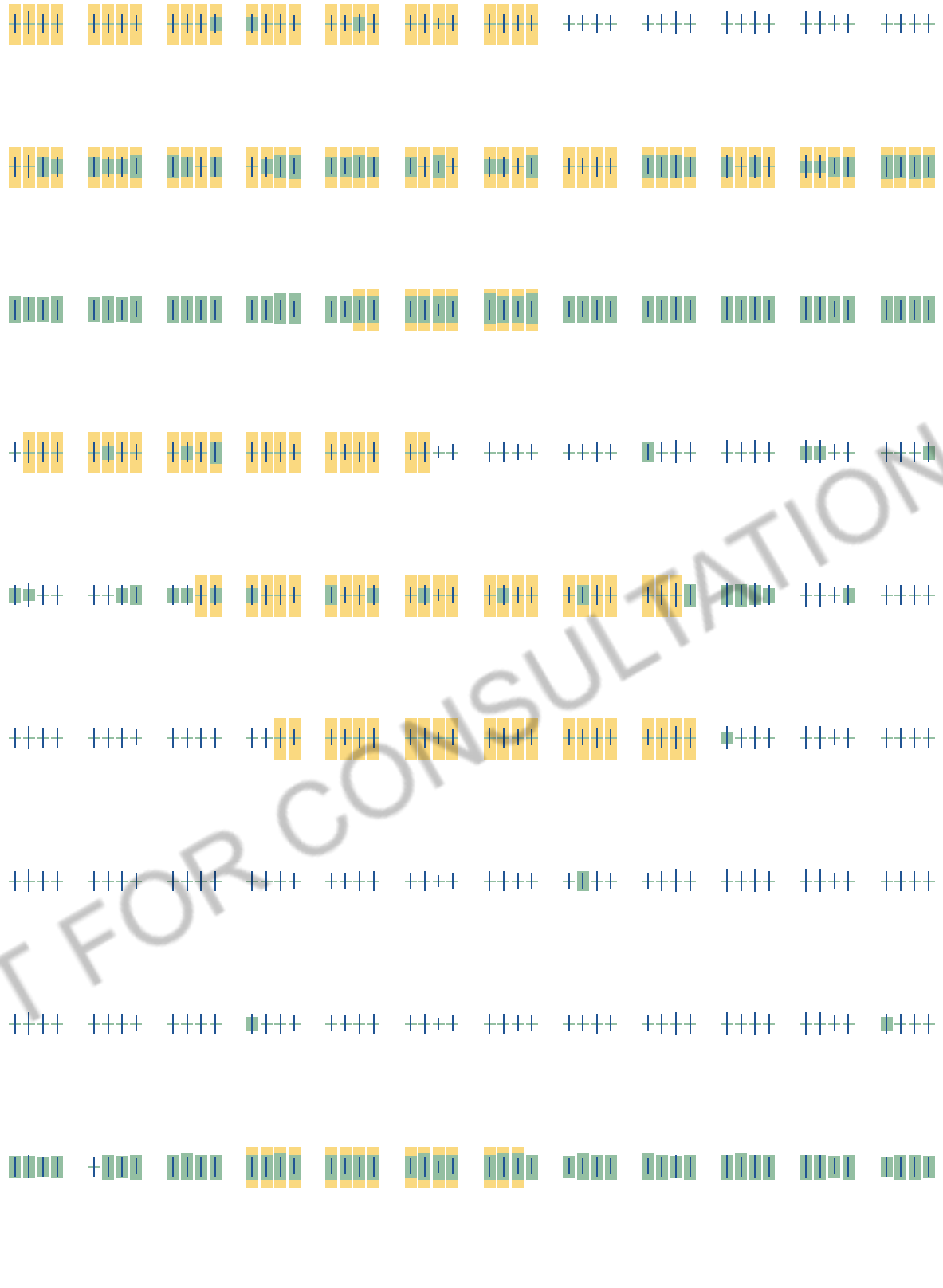

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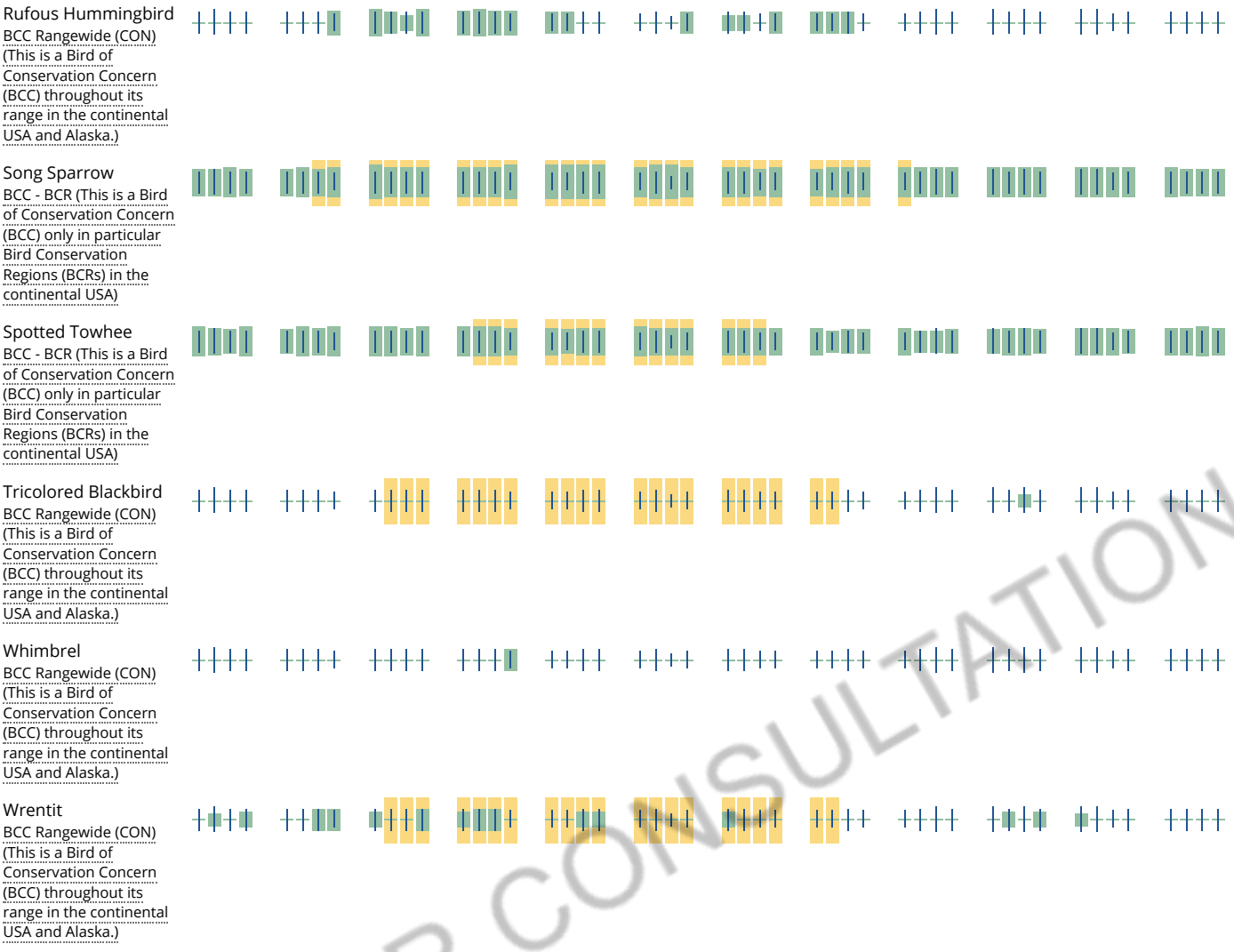

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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APPENDIX E
CULTURAL RESOURCES

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Michelle Gibbs <mgibbs@migcom.com>

Fwd: AB52 Consultation - The Arroyo at Monrovia

Michelle Gibbs <mgibbs@migcom.com> Tue, Apr 23, 2019 at 8:14 AM
To: Michelle Gibbs <mgibbs@migcom.com>

From: Sheri Bermejo [mailto:sbermejo@ci.monrovia.ca.us]
Sent: Tuesday, January 15, 2019 9:07 AM
To: Lisa Brownfield <lisab@migcom.com>; Matt <matt@walbern.com>
Cc: Nancy Lee <nlee@ci.monrovia.ca.us>
Subject: AB52 Consultation - The Arroyo at Monrovia

Good Morning, Lisa and Matt.

The Planning Division team consulted with the Kizh Nation last Thursday, January 10, 2019.

Please find attached, the Kizh Nation's suggested mitigation measures regarding tribal land and the Arroyo at Monrovia Station Project. Below is a summary of each of the attachments from the Kizh Nation.

Please feel free to let me know if you have any questions.

Best regards,

Sheri

SHERI BERMEJO

Planning Division Manager

City of Monrovia

415 South Ivy Avenue

Monrovia, CA 91016

Office: (626) 932-5539

From: Administration Gabrieleno [mailto:admin@gabrielenoindians.org]
Sent: Friday, January 11, 2019 3:31 PM
To: Nancy Lee
Cc: Matthew Teutimez; gabrielenoindians@yahoo.com
Subject: AB52 Consultation - The Arroyo at Monrovia

Nancy and all,

Thank you for your time during the AB52 consultation for your project location.

Attached are the screenshots mentioned in the consultation for your project location and some text to explain the resources of concern within the screenshots.

- Historical Map 1871 (Google Earth overlay screenshot) and the 2018 Google Earth image indicating the hydrology - These maps show the project's close proximity to the shores of the waterways that existed in this location. All water sources were used by our Tribe for life sustenance. Along these watercourses and water bodies occurred seasonal or permanent hamlets, seasonal or permanent trade depots, ceremonial and religious prayer sites, and burials and cremation sites of our ancestors. These activities occurred around water, both inland and coastal, because these water areas create unique habitats and riparian corridors that provide an abundance of food and medicine resources along with aesthetically peaceful areas with running water, shade trees, and shelter. Larger water bodies were high attractants for human activity and the banks and shores of these water bodies have a higher than average potential for encountering Tribal Cultural Resources of artifacts and human remains during ground disturbing activities.
- Historical Map 1898 (Google Earth overlay screenshot). This map shows the project's close proximity to the railroad lines that existed in this location. All railroads were placed on top of our Tribe's ancient traditional trade routes because when the first railroad planners came out west, the topography was too varied to place the rail lines just anyplace, so they chose the paths of least resistance that already existed which were our traditional trade routes that were flattened by human travel over thousands of years of use. Therefore, the location of the train tracks are also the location of the traditional trade routes.
- Historical Map 1938 (Google Earth overlay screenshot). This map shows the project's proximity to overland trade routes (1938 Map legend attached) and village areas. Trade routes were heavily used by our Tribe for movement of trade items, visiting of family, going to ceremony, accessing recreation areas, and accessing foraging areas. Within and around them contained seasonal or permanent ramadas or trade depots, seasonal and permanent habitation areas, and often contain isolated burials and cremations from folks who died along the trail and are not associated with a village community burial site or ceremonial burial site.

Due to the project site being located within and around traditional landscapes such as a sacred village, sacred water courses, and major traditional trade routes, there is a high potential to impact Tribal Cultural Resources still present within the soil from the thousands of years of prehistoric activities that occurred within and around these Tribal Cultural landscapes. Therefore, to avoid impacting or destroying Tribal Cultural Resources that may be inadvertently unearthed during the project's ground disturbing activities, attached is the mitigation language approved by our Tribal Government for use with this project.

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723

Office: 844-390-0787

website: www.gabrielenoindians.org

Attachments area

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Gabrieleno Band of Mission Indians – Kizh Nation

Protection of Tribal Cultural Resources (TCRs)

Most Important Things for Agencies to Know About AB52:

- An EIR, MND, or ND can not be certified until AB-52 tribal consultation has concluded.
- Agreed mitigation measures with the tribe, MUST be recommended for inclusion in the environmental document.
- Signature confirming acceptance of these mitigation measures recommended by our Tribal Government is required within 14 days of receipt to conclude AB52 consultation.

Tribal Cultural Resources Mitigation Measures within Kizh Nation Tribal Territory:

Note: To avoid compliance issues with the following laws, all Native American Monitoring shall be conducted by a documented lineal descendant from the ancestral Tribe of the project area (NAGPRA Law 10.14)

- The Native American Graves Protection and Repatriation Act (NAGPRA), Public Law-101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048.
- CEQA Guidelines Section15064.5, PRC 5097.98 (d)(1).
- The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

If you are receiving these measures, The Gabrieleño Band of Mission Indians Kizh -Nation are the direct lineal descendants of your project area. The Kizh Nation ONLY responds and consults on projects within their ANCESTRAL tribal territory. Therefore, to remain in compliance with above referenced laws and to enable our Tribe with the ability to protect and preserve our last remaining and irreplaceable Tribal Cultural Resources, it is recommended that the project applicant retain a qualified professional tribal monitor/consultant from the Gabrieleño Band of Mission Indians Kizh -Nation. The Kizh Nation possesses Tribal archives including documented historical information as well as multiple members who possess unique knowledge derived from oral tradition passed down through generations of the Tribe in order to provide the expertise needed to identify whether a project is located within a culturally sensitive area given its proximity to village areas, commerce areas, recreation areas, ceremonial areas, and burial locations.

Native American Heritage Commission (NAHC) Guidelines for Native American Monitors/Consultants (approved 9/13/05): By acting as a liaison between Native American, archaeologist, developers, contactors and public agency, a Native American monitor/consultant can ensure that cultural features are treated appropriately from the Native American point of view. This can help others involved in a project to coordinate mitigation measures. These guidelines are intended to provide prospective monitors/consultants, and people who hire monitors/consultants, with an understanding of the scope and extant of knowledge that should be expected.

Mitigation Guidelines for Tribal Cultural Resources (TCRs): CEQA now defines TCRs as an independent element separate from archaeological resources. Environmental documents shall address a separate Tribal Cultural Resources section that includes a thorough analysis of the impacts to only TCRs and includes separate and independent mitigation measures created with tribal input under AB-52 consultations. Therefore, all agreements, mitigation, and conditions of approval regarding TCRs shall be handled solely with the Tribal Government and conversely all agreements, mitigation, and conditions of approval regarding Archaeological Resources shall be handled by an Archaeological resource company.

MITIGATION MEASURES

Retain a Native American Monitor/Consultant: The Project Applicant shall be required to retain and compensate for the services of a Tribal monitor/consultant who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location. This list is provided by the NAHC. The monitor/consultant will only be present on-site during the construction phases that involve ground disturbing activities. Ground disturbing activities are defined by the Gabrieleño Band of Mission Indians-Kizh Nation as activities that may include, but are not limited to, pavement removal, pot-holing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching, within the project area. The Tribal Monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the project site grading and excavation activities are completed, or when the Tribal Representatives and monitor/consultant have indicated that the site has a low potential for impacting Tribal Cultural Resources.

Unanticipated Discovery of Tribal Cultural and Archaeological Resources: Upon discovery of any archaeological resources, cease construction activities in the immediate vicinity of the find until the find can be assessed. All archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians-Kizh Nation. If the resources are Native American in origin, the Gabrieleño Band of Mission Indians-Kizh Nation shall coordinate with the landowner regarding treatment and curation of these resources. Typically, the Tribe will request reburial or preservation for educational purposes. Work may continue on other parts of the project while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section15064.5 [f]). If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource", time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and

Public Resources Code Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, they shall be offered to a local school or historical society in the area for educational purposes.

Unanticipated Discovery of Human Remains and Associated Funerary Objects:
Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) and PRC 5097.98 shall be followed.

Resource Assessment & Continuation of Work Protocol:

Upon discovery, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 150 feet and place an exclusion zone around the burial. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).

Kizh-Gabrieleno Procedures for burials and funerary remains:

If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the following treatment measures shall be implemented. To the Tribe, the term "human remains" encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. These remains are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.

Treatment Measures:

Prior to the continuation of ground disturbing activities, the land owner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive diagnostics on human remains.

Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

Professional Standards: Archaeological and Native American monitoring and excavation during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of human remains and associated funerary objects shall be taken. Principal personnel must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California. The Qualified Archaeologist shall ensure that all other personnel are appropriately trained and qualified.

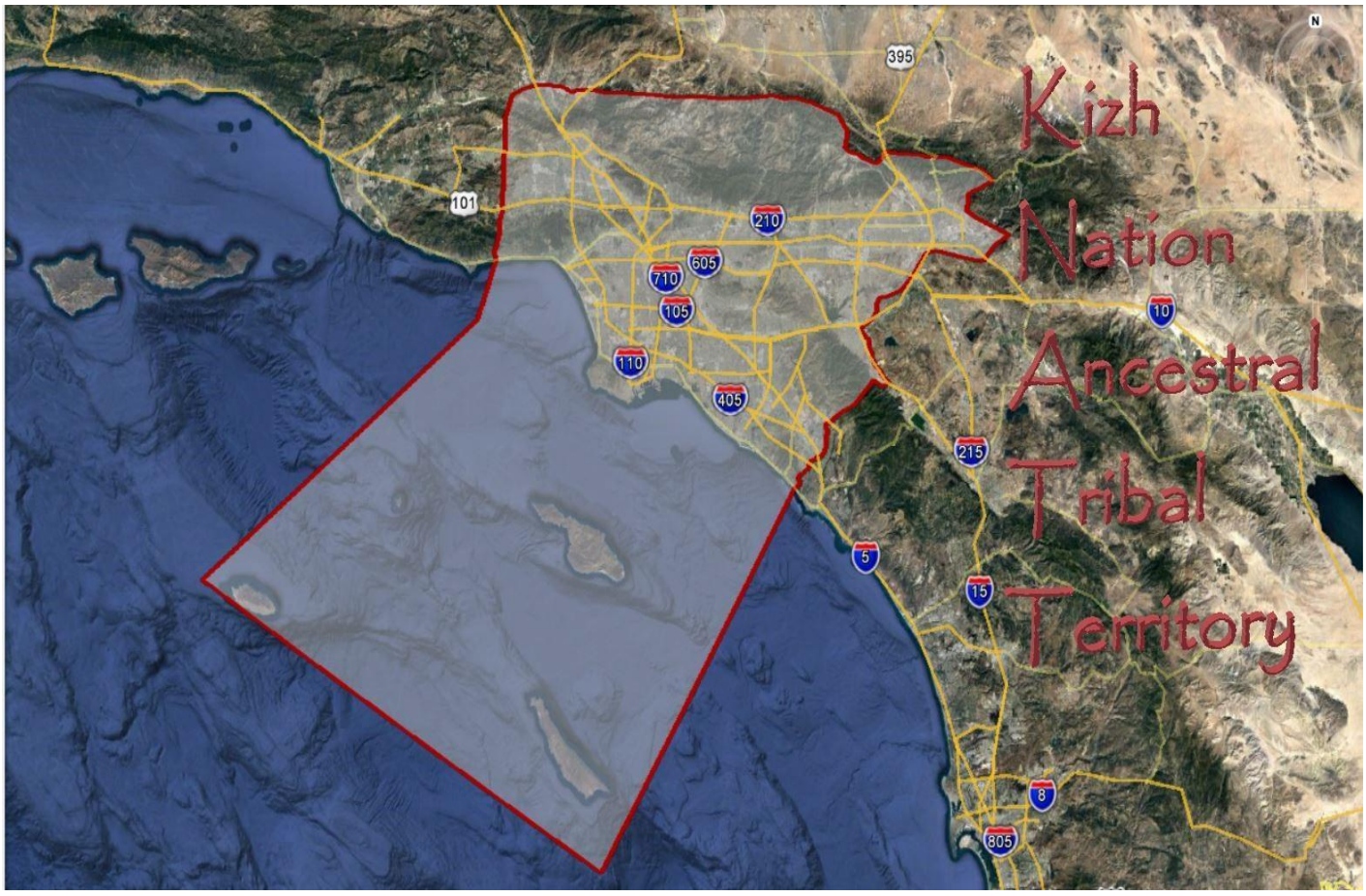
Acceptance of Tribal Government Recommended Mitigation Measures:

By _____ Date: _____
Lead Agency Representative Signature

Revised: August 2018

Attachment A

Kizh Nation Ancestral Tribal Territory extended along the coast from Malibu Creek in Los Angeles County down to Aliso Creek in Orange County and encompassed the Channel Islands of Catalina (Pimugna), San Nicolas (Haraasnga), and San Clemente (Kiinkenga). Our inland border was the San Gabriel Mountains (Hidakupa) and eastwardly our territory extended to parts of San Bernardino (Waatsngna), Orange, and Riverside counties.



APPENDIX F
GEOTECHNICAL REPORT

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December 7, 2018

Project No. 18176-01

Mr. Matthew J. Waken
MW Investment Group, LLC
27702 Crown Valley Parkway, Suite D-4-197
Ladera Ranch, CA 92694

Subject: ***Preliminary Geotechnical Subsurface Evaluation and Recommendations, Proposed "Evergreen" Mixed-Use Development, Monrovia, California***

In accordance with your request, LGC Geotechnical, Inc. is providing a preliminary geotechnical report for planned six-story mixed-use residential/retail structure at Evergreen Avenue in the City of Monrovia, California. This report presents the results of our limited subsurface explorations and geotechnical analysis and provides a summary of our conclusions and preliminary recommendations relative to the proposed site development.

Should you have any questions regarding this report, please do not hesitate to contact our office. We appreciate this opportunity to be of service.

Respectfully,

LGC Geotechnical, Inc.

Ryan Douglas, RCE C84840
Project Engineer

Dennis Boratynec, GE 2770
Vice President

RLD/DJB/CNJ/aca

Distribution: (4) Addressee (3 wet signed copies and 1 electronic copy)
(1) KHR Associates (electronic copy)
Attn: Mr. James Kawamura

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Appendix E – Seismic Settlement Calculations
Appendix F – General Earthwork and Grading Specifications

1.0 INTRODUCTION

1.1 Purpose and Scope of Services

This preliminary geotechnical report is for the planned six-story mixed-use residential/retail structure and an eight-story parking structure located at on Evergreen Avenue in the City of Monrovia, California (see Site Location Map, Figure 1). The purpose of our work was to evaluate site geotechnical conditions and to provide preliminary geotechnical recommendations with respect to the proposed development.

1.2 Project Description

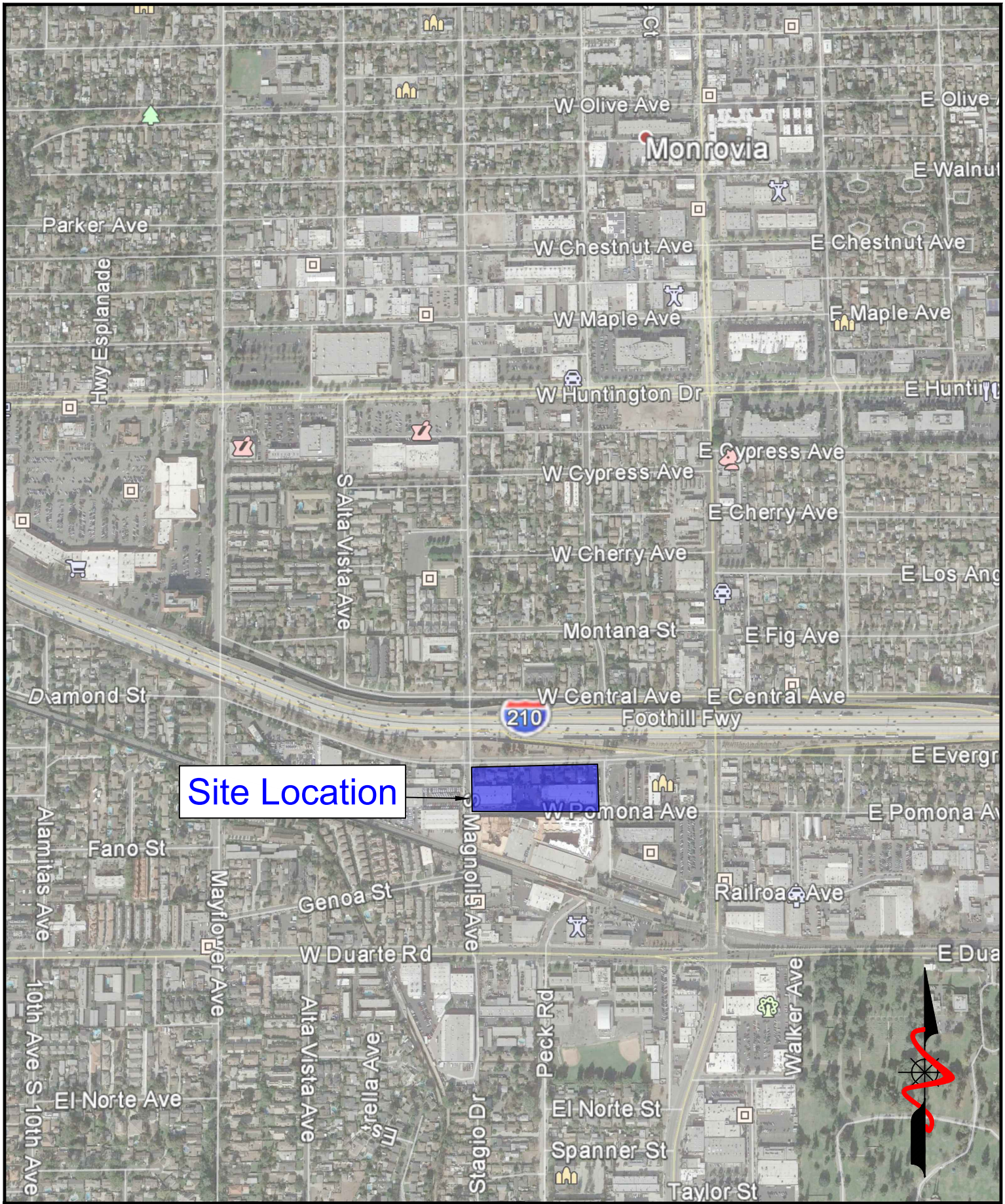
Based on the provided information, the proposed development will consist of an at-grade six-story mixed-use residential/retail structure, with 284 residential units, wrapping around an eight-story parking structure. A portion of the parking structure will be partially subterranean (estimated at approximately 5 feet below existing grade). We anticipate finish grades will only vary slightly (± 2 feet) from current grade in the proposed residential/retail structure areas. Two at-grade courtyard areas are proposed, one in the eastern and the other in the western portion of the site. The proposed development will also include residential amenities, retail space, driveways into the parking structure, etc. Presented in Table 1 is a summary of our estimated structural (dead plus live) loads for the proposed six-story mixed-use residential/retail structure and the proposed eight-story parking structure. Please note no structural loads were provided to us at the time of this report.

TABLE 1

Estimated Structural Loads

Planned Structure	Column Loads (kips)	Wall Loads (kip/ft)
6-Story Mixed-Use Structure	175	8
8-Story Parking Structure	900	25

The recommendations given in this report are based upon the proposed layout and estimated structural loading information above. We understand that the project plans are currently being developed at this time; LGC Geotechnical should be provided with updated project plans and the actual structural loads when they become available, in order to either confirm or modify the recommendations provided herein.



PROJECT NAME	MWG- Evergreen
PROJECT NO.	18176-01
ENG. / GEOL.	RLD
SCALE	Not to Scale
DATE	December 2018

LGC Geotechnical, Inc.

FIGURE 1
Site Location Map

1.3 Existing Conditions

The approximately 3-acre rectangular site is bound to the north by Evergreen Avenue, to the east by Primrose Avenue, to the south by Pomona Avenue and to the west by Magnolia Avenue. Existing improvements consist of two industrial buildings separated by a parking lot in the southern half of the site and eleven single-family lots with nine existing single-family houses, one demolished lot and one lot transformed into a parking lot, in the northern half of the site. The existing single-family homes contain residential structures, driveways, sidewalks, landscaping and other improvements.

The site has relatively minor relief with surface elevations ranging from approximately 439 to 452 feet above mean sea level (msl). Surface drainage generally flows from north east to south west toward the intersection of Pomona Avenue and Magnolia Avenue.

1.4 Subsurface Exploration

A geotechnical field evaluation was performed by LGC Geotechnical in October and November of 2018. This program consisted of drilling and sampling six small-diameter borings, two of which were for infiltration testing, one large-diameter (18-inch) boring for the dry well test and two CPT soundings to evaluate onsite geotechnical conditions.

Borings HS-1 through HS-3 and I-1 through I-2 were drilled by Yellow Jacket Drilling under subcontract to LGC Geotechnical, Boring HS-4 was drilled by 2R Drilling under subcontract to LGC Geotechnical, and boring DW-1 was drilled by Alroy Drilling under subcontract to LGC Geotechnical. The depth of the borings ranged from approximately 5 to 100 feet below existing grade. Boring I-1 and I-2 was used for shallow boring percolation testing and boring DW-1 was used for a dry well constant head percolation test. An LGC Geotechnical representative observed the drilling operations, logged the borings, and collected soil samples for laboratory testing. The borings were performed using CME-85 and CME-75 truck-mounted drill rigs equipped with 8-inch diameter hollow-stem augers and an EZ Bore bucket-auger drill rig equipped with an 18-inch diameter bucket. The upper approximate 2 to 5 feet were hand-augered due to potential utility line conflicts. Driven soil samples were collected by means of the Standard Penetration Test (SPT) and Modified California Drive (MCD) sampler generally obtained at 2.5 to 5-foot vertical increments. The MCD is a split-barrel sampler with a tapered cutting tip and lined with a series of 1-inch-tall brass rings. The SPT sampler (1.4-inch ID) and MCD sampler (2.4-inch ID, 3.0-inch OD) were driven using a 140-pound automatic hammer falling 30 inches to advance the sampler a total depth of 18 inches. The raw blow counts for each 6-inch increment of penetration were recorded on the boring logs. Bulk samples of the near-surface soils were also collected and logged at select borings for laboratory testing. At the completion of drilling, the borings were backfilled with the native soil cuttings, tamped and the surface was replaced with asphalt cold-patch, where necessary. Some settlement of the backfill soils/asphalt cold-patch may occur over time.

Two CPT soundings (CPT-1 & CPT-2) were pushed to depths of approximately 50 feet below existing grade. The CPT soundings were pushed using an electronic cone penetrometer in general accordance with the current ASTM standards (ASTM D5778 and ASTM D3441). The CPT equipment consisted of a cone penetrometer assembly mounted at the end of a series of hollow sounding rods. The interior of the cone penetrometer is instrumented with strain gauges that allow the simultaneous measurement of cone tip and friction sleeve resistance during penetration. The cone

penetration assembly is continuously pushed into the soil by a set of hydraulic rams at a standard rate of 0.8 inches per second while the cone tip resistance and sleeve friction resistance are recorded at approximately every 2 inches and stored in digital form. All CPTs were performed by Kehoe Testing & Engineering, Inc. using a 25-ton CPT rig.

Infiltration testing was performed within two of the borings (I-1 and I-2) to depths of 5 and 10 feet below existing grade and dry well percolation testing was performed within one of the borings (DW-1) to from depths of approximately 30 to 75 feet below existing grade. Infiltration testing and dry well percolation testing was performed in general accordance with the County of Los Angeles testing guidelines. The locations were subsequently backfilled with native soils at the completion of testing.

Boring Logs are presented in Appendix B and their approximate locations are depicted on Figure 2 - Boring Location Map.

1.5 Laboratory Testing

Representative driven and bulk samples were retained for laboratory testing during our field evaluation. Laboratory testing included in-situ unit weight and moisture content, fines content, consolidation, expansion index, direct shear, laboratory compaction and corrosion (sulfate, chloride, pH, and minimum resistivity).

The following is a summary of the laboratory test results.

- Dry density of the samples collected ranged from approximately 95 pounds per cubic foot (pcf) to 119 pcf, with an average of 110 pcf. Field moisture contents ranged from approximately 1 percent to 13 percent, with an average of 6 percent.
- Four fines content tests indicated a fines content (percent passing No. 200 sieve) ranging from approximately 24 percent to 33 percent. Based on the Unified Soils Classification System (USCS), all three tested samples would be classified as "coarse-grained."
- One direct shear test was performed. The plot is provided in Appendix C.
- Two consolidation tests were performed. The samples retrieved from depths of 5 and 10 feet below existing grade were inundated with water at stresses of 0.7 and 1.2 ksf, respectively. Percent of collapse was approximately 1 percent or less. The stress vs. deformation plots are provided in Appendix C.
- One Expansion Index (EI) test was performed. Results were an EI of 0, corresponding to "Very Low" expansion potential.
- Laboratory compaction (maximum dry density and optimum moisture content) test indicated a maximum dry density value of 134.5 pcf with optimum moisture content of 8.0 percent.
- Corrosion testing indicated soluble sulfate content less than 0.02 percent, chloride content of 82 parts per million (ppm), pH value of 7.71, and minimum resistivity of 1,000 ohm-cm.

A summary of the laboratory test results is presented in Appendix C.

2.0 GEOTECHNICAL CONDITIONS

2.1 Regional Geology

The site is located within the northeastern boundary of the Peninsular Ranges Geomorphic Province. The San Gabriel Mountain Range rises north of the site and provides the sediment source for the alluvial fan deposits that underlie the area of the subject site. The site is located in the San Gabriel Valley, west of the San Gabriel River.

The subject area is geologically bounded at the north by the Raymond Fault and Sierra Madre Fault Zone. The Raymond Fault is a left lateral fault that is generally assumed to be a part of the San Andreas Fault system; however, there is an indication of some reverse-slip motion along the fault. The Sierra Madre Fault Zone consists of reverse faults dipping to the north. The northeast trending Raymond Fault joins the east west trending Sierra Madre Fault Zone approximately two miles to the north of the site.

2.2 Generalized Subsurface Soils

Based on our subsurface evaluation (Borings and CPT soundings) and review of regional geologic maps and published geotechnical literature, the site contains up to approximately 7.5 feet of previously placed undocumented artificial fill over native young alluvial fan deposits. Older artificial fill soils are primarily silty sands and sands. Native alluvial fan deposits are primarily medium dense to very dense sands, silty sands, gravels, and cobbles and stiff to hard sandy silts and silts to the maximum explored depth of approximately 100 feet below exiting grade.

It should be noted that geotechnical explorations are only representative of the location where they are performed and varying subsurface conditions may exist outside of each location. In addition, subsurface conditions can change over time. The soil descriptions provided above should not be construed to mean that the subsurface profile is uniform and that soil is homogeneous within the project area. For details on the stratigraphy at the exploration locations, refer to the boring logs provided in Appendix B.

2.3 Groundwater

Groundwater was not encountered in our borings to the maximum explored depth of approximately 100 feet below existing grade. Historic high groundwater is estimated to be about 150 feet or greater below existing grade (CDMG, 1998).

It should be noted that higher localized and seasonal perched groundwater conditions may accumulate below the surface and should be expected throughout the design life of the proposed improvements. In general, groundwater conditions below any given site may vary over time depending on numerous factors including seasonal rainfall, local irrigation and intentional infiltration of stormwater among others.

2.4 Field Infiltration Testing

Two shallow infiltration tests were performed in Borings I-1 and I-2 to approximate depths of 5 and 10 feet below existing grade, respectively. The approximate locations are shown on the Boring Location Map (Figure 2). The borings for the infiltration tests were excavated using a drill rig equipped with 8-inch diameter hollow-stem augers. Estimation of infiltration rates was accomplished in general accordance with the guidelines set forth by the County of Los Angeles (2017). A 3-inch diameter perforated PVC pipe was placed in the borehole above a thin layer of gravel and the annulus was backfilled with gravel. The infiltration wells were pre-soaked 1 hour prior to testing. During the pre-test, water was added to the boring and was observed for 10 and 30 minutes. Water was fully drained in one boring (I-1) and some water remained in the other boring (I-2) after 30 minutes; therefore, the procedure for 10 and 30-minute reading intervals were followed for borings I-1 and I-2, respectively. At the completion of infiltration testing, the pipe was removed and backfilled with cuttings and tamped. Some settlement of the backfill should be expected.

Based on the County of Los Angeles testing guidelines, the raw infiltration is calculated by dividing the volume of water discharged by the surface area of the test section (including sidewalls plus the bottom of the boring), in a given amount of time. The average of the stabilized infiltration rate over the last three consecutive readings is the measured infiltration rate. The measured infiltration rates are provided in Table 2 below. Please note that the values provided in Table 1 do not include reduction factors for the test procedure, site variability and long-term siltation plugging that are required for the design infiltration rate, refer to Table 9a in Section 4.11. Infiltration tests were performed using relatively clean water free of particulates, silt, etc. Refer to the infiltration test data provided in Appendix D.

TABLE 2

Summary of Field Infiltration Testing

Infiltration Test Location	Infiltration Test Depth (ft)	Measured Infiltration Rate* (inch/hr)
I-1	5	1.9
I-2	10	0.4

*Does Not Include Required Reduction Factors, refer to Table 9a, Section 4.11.

2.5 Field Dry Well Percolation Testing

One hollow-stem auger boring (HS-4) was excavated and sampled to a depth of approximately 100 feet below existing grade prior to the drilling and installation of the dry well test hole. This boring was used to evaluate the subsurface soil stratigraphy, subsurface soil characteristics and groundwater information from a depth of 50 to 100 feet below existing grade. Data from the hollow-stem auger boring along with information provided by the dry well manufacturer team such as information regarding local soil conditions, caving potential, etc., helped us determine the target infiltration zone of 30 to 75 feet below existing grade for the dry well test.

One 18-inch diameter bucket auger boring (DW-1) was excavated to a depth of approximately 75 feet below existing grade. The approximate location is shown on the Boring Location Map (Figure

2). The bucket auger boring was utilized for a constant head dry well infiltration test performed in general accordance with the County of Los Angeles Geotechnical and Materials Engineering Division (GMED) GS200.2 (2017) guidelines. One 4-inch diameter by 75-foot long perforated PVC pipe was placed near the center of the boring to measure water level during the test. A separate 4-inch diameter by 75-foot long solid PVC pipe was also placed near the center of the boring to deliver water. The lower approximately 5 feet of the water delivery pipe was perforated for introduction of the water into the borehole without interfering with the pore pressure transducer measurement tool. The dry well anulus was subsequently backfilled with a crushed ¾-inch gravel from a depth of approximately 20 to 75 feet below ground surface. The remaining upper 20 feet of the dry well test was backfilled with the native sandy soil cuttings.

Water from a nearby fire hydrant was introduced into the solid water delivery pipe until the dry well target infiltration depth of 30 feet below existing grade was reached. The target dry well infiltration zone was tested from approximately 30 to 75 feet equating to approximately 45 feet of dry well infiltration testing. Once the target dry well water head was achieved, the water delivery flow rate was adjusted to maintain a constant head. The volume of water, in gallons, required to maintain a constant head was recorded every 20 minutes using an in-line flow meter. The flow rate was also confirmed by partially filling a 55-gallon steel drum and recording the time required to do so. At the completion of constant head testing (approximately 5 hours), the water delivery source was turned off and the water level of the falling head was recorded over time.

After all testing was complete, the two PVC pipes were backfilled with sand and the upper few feet of PVC pipes were cut and removed. Some settlement of the backfill should be expected over time. Native soil cuttings were left onsite and spread out around the dry well test hole.

Based on the County of Los Angeles testing guidelines, the raw flow rate for the 18-inch diameter dry well test is determined by calculating the volume of water discharged into the dry well (cubic feet) in a given amount of time (seconds). The average raw flow rate over the last three consecutive readings is known as the measured stabilized flow rate. To determine the raw measured infiltration rate, the stabilized flow rate is divided by surface area of the dry well test (sum of all wetted areas including the bottom surface area of the boring and wetted sidewalls). The measured stabilized flow rate and raw measured infiltration rate are provided in Table 3 below. Please note that the values provided in Table 3 do not include any reduction factors for the test procedure, site variability and long-term siltation plugging that are required in order to determine the long-term design infiltration rate, refer to Table 9b in Section 4.11. The dry well infiltration test was performed using relatively clean water free of particulates, silt, etc. Refer to the infiltration test data provided in Appendix D.

TABLE 3

Summary of Raw Dry Well Percolation Testing – 18-Inch Dry Well

Dry Well Test Location	Measured Stabilized Flow Rate* ** (cfs)	Raw Measured Infiltration Rate* (in/hr)	Total Volume of Water Percolated During Test (gal)
DW-1	0.15	30.5	21,010

* Rates do not include required reduction factors, refer to Table 9b in Section 4.11.

** The Measured Stabilized Flow Rate is only equivalent to the results of the tested 18-inch dry well. Note that a 48-inch dry well system would theoretically have a Measured Stabilized Flow Rate that could be calculated by taking the Measured Stabilized Flow Rate of the 18-inch Dry Well Percolation Test and multiplying it by the ratio of the wetted area of the proposed 48-inch diameter Production dry well over the wetted area of the 18-inch diameter Dry Well Percolation Test ($Flow_{48in} = Flow_{18in} \times (Aw_{48} / Aw_{18})$.

2.6 Seismic Design Parameters

The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2016 CBC. Representative site coordinates of latitude 34.1346 degrees north and longitude -118.0039 degrees west were utilized in our analyses. The maximum considered earthquake (MCE) spectral response accelerations (S_{MS} and S_{M1}) and adjusted design spectral response acceleration parameters (S_{DS} and S_{D1}) for Site Class D are provided in Table 4.

TABLE 4

Seismic Design Parameters

Selected Parameters from 2016 CBC, Section 1613 - Earthquake Loads	Seismic Design Values
Site Class per Chapter 20 of ASCE 7	D
Risk-Targeted Spectral Acceleration for Short Periods (S_S)*	2.137g
Risk-Targeted Spectral Accelerations for 1-Second Periods (S_1)*	0.847g
Site Coefficient F_a per Table 1613.3.3(1)	1.0
Site Coefficient F_v per Table 1613.3.3(2)	1.5
Site Modified Spectral Acceleration for Short Periods (S_{MS}) for Site Class D [Note: $S_{MS} = F_aS_S$]	2.137g
Site Modified Spectral Acceleration for 1-Second Periods (S_{M1}) for Site Class D [Note: $S_{M1} = F_vS_1$]	1.270g
Design Spectral Acceleration for Short Periods (S_{DS}) for Site Class D [Note: $S_{DS} = (^2/_3)S_{MS}$]	1.425g
Design Spectral Acceleration for 1-Second Periods (S_{D1}) for Site Class D [Note: $S_{D1} = (^2/_3)S_{M1}$]	0.847g
Mapped Risk Coefficient at 0.2 sec Spectral Response Period, C_{RS} (per ASCE 7)	0.968
Mapped Risk Coefficient at 1 sec Spectral Response Period, C_{R1} (per ASCE 7)	0.966

* From USGS, 2018

Section 1803.5.12 of the 2016 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE_G) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA_M for the site is equal to 0.812g (USGS, 2018).

A deaggregation of the PGA based on a 2,475-year average return period indicates that an earthquake magnitude of 7.7 at a distance of approximately 4 km from the site would contribute the most to this ground motion (USGS, 2008).

2.7 Faulting

The subject site is not located within a State of California Earthquake Fault Zone (i.e., Alquist-Priolo Earthquake Fault Act Zone) and no active faults are known to cross the site (CGS, 2017). A fault is considered "active" if evidence of surface rupture in Holocene time (the last approximately 11,000 years) is present.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching and shallow ground rupture, soil liquefaction, and dynamic settlement. These secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. The nearby major active faults that could produce these secondary effects include the Raymond, Sierra Madre, Elsinore and San Andreas Faults, among others. A discussion of these secondary effects is provided in the following sections.

2.7.1 Liquefaction and Dynamic Settlement

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that loose, saturated, near surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction (Bray & Sancio, 2006). Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

The site is not located within a State of California Seismic Hazard Zone for liquefaction potential (CGS, 1999). Site soils are not generally susceptible to liquefaction due to a lack of groundwater in the upper 50 feet; therefore, the potential for liquefaction is considered very low. However, isolated layers may be susceptible to dry sand seismic settlement. Seismically induced dry sand settlements were estimated by the procedures outlined by Pradel (Pradel, 1998) using the PGA_M per the 2016 CBC and a moment magnitude of 7.7 (USGS, 2008).

Based on the data obtained from our field evaluation, seismic settlement due to dry sands is estimated to be on the order of about 1½ inches or less. Anticipated seismic settlement values will vary based on the proposed structure type (parking structure or residential building) and corresponding grading recommendations (see Section 4.2). Differential seismic settlement may be estimated as half of the total seismic settlement over a horizontal span of 40 feet. Calculations are provided in Appendix E.

2.7.2 Lateral Spreading

Lateral spreading is a type of liquefaction induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move downslope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures.

Due to the lack of groundwater in the upper 50 feet, lack of a nearby free face and very low potential for liquefaction, the potential for lateral spreading is considered very low.

2.8 Expansion Potential

Based on the results of previous laboratory testing by others and our recent laboratory testing, site soils have a "Very Low" expansion potential. Final expansion potential of site soils should be determined at the completion of grading. Results of expansion testing at finish grades will be utilized to confirm final foundation design.

2.9 Static Settlement and Hydro-Consolidation

After completion of grading, the subsurface conditions will consist of engineered fill placed over alluvial fan deposits. Static settlements will be induced by subjecting the finish grades to building loads. Static settlement should occur relatively quickly.

The underlying alluvial fan deposits were found to be generally medium dense to very dense sands, gravelly sands and silty sands. Laboratory test data consisting of in-situ moisture content, consolidation tests and sieve analysis suggests silty sandy soils are considered generally slightly over-consolidated. Anticipated static settlements for the proposed eight-story parking structure and six-story mixed use building(s) are presented in Section 4.2, "Allowable Bearing Pressures and Passive Resistance".

In addition to static settlement, our recent exploratory drilling, CPT soundings and laboratory testing indicate the presence of potentially collapsible soils. The collapse potential (or hydro-collapse) of the tested samples ranged from approximately 0.6 to 0.7 percent which is considered to be slightly susceptible to hydro-collapse.

3.0 CONCLUSIONS

Based on the results of our subsurface evaluation and understanding of the proposed development, it is our opinion that the proposed development is feasible from a geotechnical standpoint. A summary of our conclusions are as follows:

- Based on our subsurface evaluation (Borings and CPTs) the site is estimated to contain up to approximately 7.5 feet of previously placed undocumented artificial fill over native alluvial soils. Older artificial fill soils are primarily silty sands and sands. Native alluvial fan deposits are primarily medium dense to very dense sands, silty sands, gravels, and cobbles and stiff to hard sandy silts and silts to the maximum explored depth of 100 feet below exiting grade.
- The near-surface soils are generally loose, dry and collapsible and are not suitable for the planned improvements in their present condition (refer to Section 4.1); removal and recompaction will be required.
- Groundwater was not encountered during our recent subsurface evaluation to the maximum explored depth of approximately 100 feet below existing ground surface. Historic high groundwater for the site is about 150 feet or greater below existing ground surface (CDMG, 1998).
- The site is not located within a State of California Seismic Hazard Zone for liquefaction potential (CGS, 1999). The potential for liquefaction is considered very low due to the lack of a groundwater table. However, isolated layers are susceptible to dry sand seismic settlement. Total dynamic settlement is estimated to be on the order of 1½ inches or less. Differential settlement may be estimated as half of the total settlement over a horizontal span of 40 feet.
- The proposed development will likely be subjected to strong seismic ground shaking during its design life. The site is not located within a State of California Earthquake Fault Zone (i.e., Alquist-Priolo Earthquake Fault Act Zone) and no active faults are known to cross the site (CGS, 2017).
- Due to the proximity of the proposed improvements to the property line in portions of the site, temporary shoring or "A-B-C" slot cuts may be required to achieve required earthwork removal and recompaction.
- Provided our earthwork removal and recompction recommendations are implemented (refer to Section 4.1), the proposed eight-story parking structure and six-story mixed use building(s) may be supported on a shallow foundation system. Preliminary long-term static settlement estimates based on the estimated building loads are presented in Section 4.2.
- Based on the results of preliminary laboratory testing, site soils are anticipated to have "Very Low" expansion potential. Final design expansion potential must be determined at the completion of grading.
- Based on the corrosion test results, soils are not considered corrosive per the Caltrans criteria (Caltrans, 2015).
- Excavations into the existing site soils should be feasible with heavy construction equipment in good working order. We anticipate that the sandy and silty earth materials generated from the excavations will be generally suitable for re-use as compacted fill, provided they are relatively free of rocks larger than 8 inches in dimension, construction debris, and significant organic material.
- Some portion of the onsite soils have high fines content; therefore, are not suitable for backfill of site retaining walls. Therefore, import and/or stockpiling of onsite sandy soils meeting project recommendations may be required.

- Do to the collapse potential of soils in the upper approximately 20 to 25 feet, intentional infiltration of stormwater is not recommended within the upper 30 feet.

4.0 RECOMMENDATIONS

The following recommendations are to be considered preliminary and should be confirmed upon completion of grading and earthwork operations. In addition, they should be considered minimal from a geotechnical viewpoint, as there may be more restrictive requirements from the architect, structural engineer, building codes, governing agencies, or the owner.

It should be noted that the following geotechnical recommendations are intended to provide the owner with sufficient information to develop the site in general accordance with the 2016 California Building Code (CBC) requirements. With regard to the potential occurrence of potentially catastrophic geotechnical hazards such as fault rupture, earthquake-induced landslides, liquefaction, etc. the following geotechnical recommendations should provide adequate protection for the proposed development to the extent required to reduce seismic risk to an "acceptable level." The "acceptable level" of risk is defined by the California Code of Regulations as "that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project" [Section 3721(a)]. Therefore, repair and remedial work of the proposed structures may be required after a significant seismic event. With regards to the potential for less significant geologic hazards to the proposed development, the recommendations contained herein are intended as a reasonable protection against the potential damaging effects of geotechnical phenomena such as expansive soils, soil settlement, groundwater seepage, etc. It should be understood, however, that our recommendations are intended to maintain the structural integrity of the proposed development and structures given the site geotechnical conditions, but cannot preclude the potential for some cosmetic distress or nuisance issues to develop as a result of the site geotechnical conditions.

The geotechnical recommendations contained herein must be confirmed to be suitable or modified based on the actual as-graded conditions.

4.1 Site Earthwork

We anticipate that earthwork will generally consist of demolition of existing improvements, required removal and recompaction, subgrade preparation, precise grading and construction of the proposed new improvements including the parking and residential structures, site amenities, courtyards, subsurface utilities, driveways, etc.

We recommend that earthwork onsite be performed in accordance with the following recommendations, future geotechnical reports, the 2016 CBC/City of Monrovia requirements and the General Earthwork and Grading Specifications included in Appendix F. In case of conflict, the following recommendations shall supersede those included in Appendix F. The following recommendations should be considered preliminary and may be revised based upon future evaluation and our review of updated project plans and/or the field conditions exposed during site grading/construction.

4.1.1 Clearing and Grubbing

Prior to earthwork of areas to receive structural fill, engineered structures or improvements, the areas should be cleared of existing vegetation, building structures, pavement, utilities, surface

obstructions, existing debris and potentially compressible or otherwise unsuitable material. Vegetation and debris should be removed and properly disposed of off-site. Holes resulting from the removal of buried obstructions, which extend below proposed removal bottoms, should be replaced with properly compacted fill material. Any abandoned sewer or storm drain lines should be completely removed and replaced with properly placed compacted fill. Deeper demolition may be required in order to remove existing foundations. We recommend the trenches associated with demolition which extend below the remedial grading depth be backfilled and properly compacted prior to the demolition contractor leaving the site.

If cesspools or septic systems are encountered during earthwork, they should be removed in their entirety. The resulting excavation should be backfilled with properly compacted fill soils. As an alternative, cesspools can be backfilled with lean sand-cement slurry. At the conclusion of the clearing operations, a representative of LGC Geotechnical should observe and accept the site prior to further earthwork.

4.1.2 Removal and Recompaction Depths and Limits

In order to provide a relatively uniform bearing condition for the planned building structures and improvements we recommend the site soils be removed and recompacted. All existing onsite artificial fill shall be fully removed to suitable, competent native materials prior to placement of fill to design grades. Subsurface site soils should be removed and/or over-excavated according to the criteria outlined below. Updated recommendations may be required based on additional field evaluation, changes to building layouts and actual structural loads.

Eight-Story Parking Structure: We recommend that soils within the proposed parking structure footprint areas be removed and recompacted to a minimum depth of 10 feet below existing grade or 3 feet beneath the base of the parking structure foundations, whichever is deeper. If a ground improvement technique is chosen along the perimeter edge of the parking structure directly adjacent to the property line instead of deep native alluvium removal and recompaction, post-ground improvement removal and recompaction beneath future improvements (e.g., flatwork, pavement, walls, etc.) should also be performed per the recommendations provided below. Localized deeper removal and recompaction may be required.

Six-Story Mixed-Use Building(s): We recommend that soils within the proposed mixed-use building footprint areas be removed and recompacted to a minimum depth of 5 feet below existing grade or 3 feet beneath the base of foundations, whichever is deeper. Localized deeper removal and recompaction may be required.

Where adequate space is available, the base of removal bottoms should extend laterally a minimum distance equal to the depth of removal and recompaction below finish grade. Specifically, soils located within a 1:1 (horizontal to vertical) projection of the bottom of footings must be engineered compacted fill or competent natural ground. Building lines may be defined as the perimeter of the building proper, plus attached or adjacent foundation supported features, including canopies, elevators, or walls.

For minor site structures, such as free-standing, screen walls and minor retaining walls, the removal and recompaction should extend at least 3 feet beneath existing grade or 2 feet

beneath the base of foundations, whichever is deeper. In general, the envelope for removal and recompaction should extend laterally a minimum distance of 3 feet beyond the edges of the proposed improvements mentioned above.

Within non-structural areas (i.e., areas designed to receive concrete/asphalt paving, pavers, flatwork, etc.), the soils should be removed and replaced as properly compacted fill to a minimum depth of 2 feet below existing grade or 1-foot below the proposed finished subgrade, whichever is deeper. In general, the envelope for removal and recompaction should extend laterally a minimum distance of 2 feet beyond the edges of the proposed improvements mentioned above.

Local conditions may be encountered which could require additional removal and recompaction beyond the above-noted minimum to obtain an acceptable subgrade. The actual depths and lateral extents of removal and recompaction should be determined by the geotechnical consultant based on the subsurface conditions encountered during grading. Removal and recompaction areas and areas should be accurately staked in the field by the Project Surveyor.

4.1.3 Excavations

Excavations up to approximately 10 feet are anticipated for the recommended earthwork removal and recompaction. Temporary excavations should be performed in accordance with project plans, specifications, and all Occupational Safety and Health Administration (OSHA) requirements. Excavations should be laid back or shored in accordance with OSHA requirements before personnel or equipment are allowed to enter. Based on our field investigation, the majority of site soils are anticipated to be OSHA Type "B" soils (refer to the attached boring logs). Sandy soils are present and should be considered susceptible to caving. Raveling of the sandy soils should be anticipated for temporary slopes. Flatter slope inclinations should be considered if raveling cannot be tolerated. The exposed slope surface may be kept surficially moist (but not saturated) during construction to reduce (not eliminate) potential sloughing. Soil conditions should be regularly evaluated during construction to verify conditions are as anticipated. The contractor shall be responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Close coordination with the geotechnical consultant should be maintained to facilitate construction while providing safe excavations. Excavation safety is the sole responsibility of the contractor.

The potential for impacting the existing improvements may be reduced by the installation of temporary shoring or performing narrow "A-B-C" slot cuts while performing earthwork removal and recompaction for the proposed perimeter parking structure and mixed-use buildings. Slot cuts should be backfilled immediately with properly compacted fill to finish grade prior to excavation of the adjacent two slots. Please note sands susceptible to caving are present at the site. Recommendations for slot cut dimensions should be evaluated during grading. Protection of the existing offsite improvements during grading is the responsibility of the contractor.

Surcharge loads (vehicular traffic, soil stockpiles, construction equipment, etc.) should be set back from the perimeter of excavations a minimum distance equivalent to a 1:1 projection from the bottom of the excavation or 5 feet, whichever is greater, unless the cut is properly shored

and designed for the applicable surcharge load. Once an excavation has been initiated, it should be backfilled as soon as practical. Prolonged exposure of temporary excavations may result in some localized instability. Excavations should be planned so that they are not initiated without sufficient time to shore/fill them prior to weekends, holidays, or forecasted rain.

It should be noted that any excavation that extends below a 1:1 (horizontal to vertical) projection of an existing foundation will remove existing support of the structure foundation. Temporary shoring parameters are provided in Section 4.6.

4.1.4 Removal Bottoms and Subgrade Preparation

In general, removal bottoms and areas to receive compacted fill should be scarified to a minimum depth of 6 inches, brought to a near-optimum moisture condition (generally within optimum and 2 percent above optimum moisture content), and re-compacted per project recommendations.

Removal bottoms and areas to receive fill should be observed and accepted by the geotechnical consultant prior to subsequent fill placement. Soil subgrade for planned footings and improvements (e.g., slabs, etc.) should be firm and competent.

4.1.5 Material for Fill

From a geotechnical perspective, the onsite soils are generally suitable for use as general compacted fill, provided they are screened of oversized material (8 inches in greatest dimension), construction debris and significant organic materials.

From a geotechnical viewpoint, any required import soils for general fill (i.e., non-retaining wall backfill) should consist of soils of granular soils of "Very Low" expansion potential (expansion index 20 or less based on American Society for Testing and Materials [ASTM] D 4829), and free of organic materials, construction debris and any material greater than 3 inches in maximum dimension. Import for any required retaining wall backfill should meet the criteria outlined in the following paragraph. Source samples should be provided to the geotechnical consultant for laboratory testing a minimum of four working days prior to any planned importation.

Retaining wall backfill should consist of imported or onsite clean granular (sandy) soils with a maximum of 35 percent fines (passing the No. 200 sieve) per American Society for Testing and Materials (ASTM) D1140 (or ASTM D6913/ASTM D422) and a "Very Low" expansion potential (EI of 20 or less per ASTM D4829). Soils should also be screened of organic materials, construction debris, and any material greater than 3 inches in maximum dimension. The majority of the onsite soils should be suitable for retaining wall backfill; therefore, select grading and stockpiling and/or import of soils meeting the criteria outlined above will be required by the contractor for obtaining suitable retaining wall backfill soil. These preliminary findings should be confirmed during grading.

Aggregate base (crushed aggregate base or crushed miscellaneous base) should conform to the requirements of Section 200-2 of the Standard Specifications for Public Works Construction ("Green Book") for untreated base materials (except processed miscellaneous base), Caltrans Class 2 aggregate base or the City of Monrovia requirements.

The placement of demolition materials in compacted fill is acceptable from a geotechnical viewpoint provided the demolition material is broken up into pieces not larger than typically used for aggregate base (approximately 1-inch in maximum dimension) and well blended into fill soils with essentially no resulting voids. Demolition material placed in fills must be free of construction debris (wood, brick, etc.) and reinforcing steel. If asphalt concrete fragments will be incorporated into the demolition materials, approval from an environmental viewpoint may be required and is not the purview of the geotechnical consultant. From our previous experience, we recommend that asphalt concrete fragments be limited to fill areas within planned parking structure (i.e., not within building pad areas).

4.1.6 Placement and Compaction of Fills

Material to be placed as fill should be brought to near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content) and recompacted to at least 90 percent relative compaction (per ASTM D1557). Moisture conditioning of site soils will be required in order to achieve adequate compaction. Drying and or mixing of very moist soils may be required prior to reusing the materials in compacted fills. In general, the site soils will require additional moisture in order to achieve the required compaction.

The optimum lift thickness to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in uniform lifts not exceeding 8 inches in compacted thickness. Each lift should be thoroughly compacted and accepted prior to subsequent lifts. Generally, placement and compaction of fill should be performed in accordance with the local grading ordinances with observation and testing performed by the geotechnical consultant. Oversized material as previously defined should be removed from site fills.

During backfill of excavations, the fill should be properly benched into firm and competent soils of temporary backcut slopes as it is placed in lifts.

Aggregate base material should be compacted to a minimum of 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Subgrade below aggregate base should be compacted to a minimum of 90 percent relative compaction per ASTM D1557 at near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content).
If gap-graded ¾-inch rock is used for backfill (around storm drain storage chambers, retaining wall backfill, etc.) it will require compaction. Rock shall be placed in thin lifts (typically not exceeding 6 inches) and mechanically compacted with observation by geotechnical consultant. Backfill rock shall meet the requirements of ASTM D2321. Gap-graded rock is required to be wrapped in filter fabric to prevent the migration of fines into the rock backfill.

4.1.7 Trench and Retaining Wall Backfill and Compaction

The onsite soils may generally be suitable as trench backfill, provided the soils are screened of rocks, construction debris, other material greater than 6 inches in diameter and significant organic matter. If trenches are shallow or the use of conventional equipment may result in damage to the utilities, sand having a sand equivalent (SE) of 30 or greater (per Caltrans Test Method [CTM] 217) may be used to bed and shade the pipes within the bedding zone. Based on our field evaluation, onsite soils may not meet this sand equivalent requirement. Sand backfill within the pipe bedding zone may be densified by jetting or flooding and then tamping to ensure adequate compaction. Subsequent trench backfill should be compacted in uniform lifts (as outlined above in section "Material for Fill") by mechanical means to at least 90 percent relative compaction (per ASTM D1557).

Utility trenches running parallel to footings should not be excavated within a 1:1 (horizontal to vertical) downward projection from adjacent footings ("footing influence zone") to avoid potential undermining. Depending on the utility line and structural loading of the footing, utility trenches running perpendicular to footings may require special provisions such as sand-cement slurry backfill of the utility trench in this zone or flexible sleeves through the footings. These conditions should be evaluated on a case-by-case basis.

Any required retaining wall backfill should consist of sandy soils as defined in the above section "Material for Fill." The limits of select sandy backfill should extend at minimum ½ the height of the retaining wall or the width of the heel (if applicable), whichever is greater (see Figure 3). Retaining wall backfill soils should be compacted in relatively uniform thin lifts to at least 90 percent relative compaction (per ASTM D1557). Jetting or flooding of retaining wall backfill materials should not be permitted.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, typically sand-cement slurry may be substituted for compacted backfill. The slurry should contain about one sack of cement per cubic yard. When set, such a mix typically has the consistency of compacted soil. Sand cement slurry placed near the surface within landscape areas should be evaluated for potential impacts on planned improvements.

A representative from LGC Geotechnical should observe, probe, and test backfill to verify compliance with the project recommendations.

4.1.8 Shrinkage and Subsidence

Allowance in the earthwork volumes budget should be made for an estimated 5 to 15 percent reduction in volume of the upper approximate 10 feet of site soils. It should be stressed that these values are only estimates and that an actual shrinkage factor would be extremely difficult to predetermine. Subsidence due to earthwork equipment is expected to be on the order of 0.1 feet. These values are estimates only and exclude losses due to removal of vegetation or debris. The effective shrinkage of onsite soils will depend primarily on the type of compaction equipment, method of compaction used onsite by the contractor and accuracy of the topographic survey.

4.2 Allowable Bearing Pressures and Passive Resistance

Provided our earthwork removal and recompaction recommendations are implemented, the proposed eight-story parking structure and six-story mixed-use building(s) may be supported on shallow foundation systems. The following minimum footing widths and embedments are recommended for the corresponding allowable bearing pressures for both continuous wall and column spread footings.

TABLE 5

Allowable Soil Bearing Pressures

Allowable Static Bearing Pressure (psf)	Minimum Footing Width (feet)	Minimum Footing Embedment* (feet)
3,500	5	2
3,000	3	2
2,500	2	1.5

* Refers to minimum depth measured below lowest adjacent grade.

These net bearing pressures (exclusive of the weight of the footings) are for dead plus live loads and may be increased one-third for short-term, transient, wind and seismic loading. The allowable bearing pressures are applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. The maximum edge pressures induced by eccentric loading or overturning moments should not be allowed to exceed these recommended values. For any bearing pressures, less than 2,500 psf, a minimum footing width of 1.5 feet and depth of 1.5 feet below lowest adjacent grade should be used.

Static settlements were evaluated utilizing our estimated building loads, the above-mentioned allowable bearing capacity and earthwork removal and recompaction recommendations. Anticipated settlement estimates are presented below.

Eight-Story Parking Structure: Static foundation settlement of the proposed eight-story parking structure is anticipated to be on the order of 1½-inch or less. Static settlement should occur relatively quickly during construction. Differential static settlement may be taken as half of the static settlement (i.e., ¾-inch over a horizontal span of 40 feet or between columns). Furthermore, seismic settlement due to dry-sand settlement is anticipated to be 1-inch or less. Differential seismic settlement may be taken as half of the seismic settlement (i.e., ½-inch over a horizontal span of 40 feet). Settlement estimates should be evaluated by LGC Geotechnical when actual building loads and foundation plans are made available.

Six-Story Mixed-Use Building(s): Static foundation settlement of the proposed six-story mixed-use building(s) is anticipated to be on the order of 1-inch or less. Static settlement should occur relatively quickly during construction. Differential static settlement may be taken as half of the static settlement (i.e., ½-inch over a horizontal span of 40 feet or between columns). Furthermore, seismic settlement due to dry-sand settlement is anticipated to be 1½ inches or less. Differential seismic settlement may be taken as half of the seismic settlement (i.e., ¾-inch over a horizontal span of 40 feet). Settlement

estimates should be evaluated by LGC Geotechnical when actual building loads and foundation plans are made available.

Resistance to lateral loads can be provided by friction acting at the base of foundations and by passive earth pressure. For concrete/soil frictional resistance, an allowable coefficient of friction of 0.35 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 250 pcf to a maximum of 2,500 pcf may be used for lateral resistance for properly compacted fill and suitable dense native soils. This allowable passive pressure may be increased to 340 pcf to a maximum of 3,400 pcf for short-duration seismic loading. This passive pressure is applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Frictional resistance and passive pressure may be used in combination without reduction. The provided allowable passive pressure includes a static and seismic factor of safety of 1.5 and 1.1, respectively.

4.3 Ground Improvement Alternative for Parking Structure Edge Conditions

An alternative to performing remedial grading using either slot cuts or temporary shoring around the perimeter edge of the parking structure directly adjacent to the property line, a ground improvement technique such as Rammed Aggregate Piers (RAP) may be utilized. The advantage of this system is that it would significantly reduce remedial grading and also required temporary shoring and/or required slot cuts since significant portions of the near-surface alluvium is adjacent to the property line. Rammed aggregate piers (RAP) consist of drilled holes filled with aggregate base than is mechanically compacted as it is placed. Because such systems are proprietary (e.g., Geopiers, etc.), the work is performed on a design-build basis by the specialty contractor. The entire aspects of the design and construction of the specialty contractor are the responsibility of the specialty contractor designer including estimated settlements of footings bearing on the designed ground improvement such as RAP. Typically, ground improvement such as RAP provide a significant increase in allowable soil bearing capacity and reduced total and differential settlement due to building loads. Since this ground improvement would likely only be for the perimeter of the site to mitigate upper approximate 10 feet of alluvial soils in the proposed parking structure areas, attention would be required to ensure differential settlement of the parking structure foundations over this transition (i.e., ground improvement to compacted fill soils) is within tolerable limits.

The geotechnical consultant shall observe the ground improvement by the specialty contractor to confirm that they have been installed in accordance with the approved plans. A representative of LGC Geotechnical can perform these services including confirmation of the diameter of the drilled hole, specified lift thickness and compaction effort. The locations of the RAPs should be confirmed by the project surveyor.

4.4 Building Slabs

Concrete building slabs should be supported on compacted and moisture-conditioned site sandy soils with Very Low expansion potential (EI of 20 or less per ASTM D4829) as outlined in the "Site Earthwork" section of this report. The foundation designer may use a modulus of vertical subgrade reaction (k) of 200 pounds per cubic inch (pounds per square inch per inch of deflection). Structural design of the slabs (thickness, reinforcement, etc.) should be performed by the structural engineer.

The following is for informational purposes only since slab underlayment (e.g., moisture retarder, sand or gravel layers for concrete curing and/or capillary break) is unrelated to the geotechnical performance of the foundation and thereby not the purview of the geotechnical consultant. Post-construction moisture migration should be expected below the foundation. The foundation engineer/architect should determine whether the use of a capillary break (sand or gravel layer), in conjunction with the vapor retarder, is necessary or required by code. Sand layer thickness and location (above and/or below vapor retarder) should also be determined by the foundation engineer/architect.

4.5 Lateral Earth Pressures for Retaining Wall Design

The following may be used for design of site retaining walls. A portion of the proposed parking structure will be partially subterranean (estimated at approximately 5 feet below existing grade). Retaining walls are anticipated within portions of the proposed parking structure. Lateral earth pressures are provided as equivalent fluid unit weights, in pound per square foot (psf) per foot of depth or pcf. A soil unit weight of 120 pcf may be assumed for calculating the actual weight of soil over the wall footing.

The following lateral earth pressures are presented on Table 6 for approved select granular soils with a maximum of 35 percent fines (passing the No. 200 sieve per ASTM D-421/422) and a "Very Low" expansion potential (EI of 20 or less per ASTM D4829). The wall designer should clearly indicate on the retaining wall plans the required sandy soil backfill criteria. The majority of the onsite soils should be suitable for retaining wall backfill. Therefore, select grading and stockpiling and/or import of soils meeting the criteria outlined above will be required by the contractor for obtaining suitable retaining wall backfill soil. These preliminary findings should be confirmed during grading.

TABLE 6

Lateral Earth Pressures – On-site or Imported Select Sandy Backfill

Conditions	Equivalent Fluid Unit Weight (pcf) Level Backfill Approved Soils	Equivalent Fluid Unit Weight (pcf) 2:1 Sloped Backfill Approved Soils
Active	35	55
At-Rest	55	70

If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for "active" pressure. If the wall cannot yield under the applied load, the earth pressure will be higher. This would include 90-degree corners of retaining walls. Such walls should be designed for "at-rest." The equivalent fluid pressure values assume free-draining conditions and a drainage system will be installed and maintained to prevent the build-up of hydrostatic pressures. Retaining wall structures should be provided with appropriate drainage and appropriately waterproofed. Typical conventional retaining wall

drainage is shown on Figure 3. Please note that waterproofing and outlet systems are not the purview of the geotechnical consultant. If conditions other than those assumed above are anticipated, the equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical consultant.

Surcharge loading effects from any adjacent structures should be evaluated by the retaining wall designer. In general, structural loads within a 1:1 (horizontal to vertical) upward projection from the bottom of the proposed basement/retaining wall footing will surcharge the proposed retaining structure. In addition to the recommended earth pressure, retaining walls adjacent to streets should be designed to resist vehicle traffic if applicable. Typical vehicle traffic may be estimated as equivalent to 2 feet of compacted fill, a vertical pressure of 240 psf. A uniform lateral pressure for typical vehicle traffic of 80 psf and 120 psf may be used for the active and at-rest conditions, respectively. Uniform lateral surcharges may be estimated using the applicable coefficient of lateral earth pressure using a rectangular distribution. A factor of 0.45 and 0.3 may be used for at-rest and active conditions, respectively. The retaining wall designer should contact the geotechnical engineer for any required geotechnical input in estimating any applicable surcharge loads.

If required, the retaining wall designer may use a seismic lateral earth pressure increment of 10 pcf for level backfill conditions. This increment should be applied in addition to the provided static lateral earth pressure using a triangular distribution with the resultant acting at H/3 in relation to the base of the retaining structure (where H is the retained height). For the restrained, at-rest condition, the seismic increment may be added to the applicable active lateral earth pressure (in lieu of the at-rest lateral earth pressure) when analyzing short duration seismic loading. Per Section 1803.5.12 of the 2016 CBC, the seismic lateral earth pressure is applicable to structures assigned to Seismic Design Category D through F for retaining wall structures supporting more than 6 feet of backfill height. The provided seismic lateral earth pressure should not be used for retaining walls exceeding 10 feet in height. This seismic lateral earth pressure is estimated using the procedure outlined by the Structural Engineers Association of California (Lew, et al, 2010).

Soil bearing and lateral resistance (friction coefficient and passive resistance) are provided in Section 4.2. Earthwork considerations (temporary backcuts, backfill, compaction, etc.) for retaining walls are provided in Section 4.1 (Site Earthwork) and the subsequent earthwork related sub-sections.

4.6 Temporary Shoring

Typical cantilever temporary shoring, where deflection of the shoring will not impact the performance of adjacent structures, with a level backfill may be designed using the active equivalent fluid pressures of 35 pounds per square foot (psf) per foot of depth (or pcf). Braced shoring may be used in areas where the shoring will be located close to existing structures in order to limit shoring defections or required due to the proposed depth of excavation. Braced shoring with a level backfill without hydrostatic pressures (above groundwater) may be designed using a uniform soil pressure of 24H in pounds per square foot (psf), where H is equal to the depth in feet of the excavation being shored. Any slopes above temporary shoring will increase the above-noted lateral earth pressures and can be provided on a case-by-case basis. Any building, equipment or traffic loads located within a 1:1 (horizontal to vertical) projection from the base of the shoring should be added to the applicable lateral earth pressure. Refer to the surcharge loading effects discussion provided in above Section 4.5. The shoring designer should contact the geotechnical engineer for any required geotechnical input in estimating any applicable lateral surcharge loads.

Continuous lagging should be provided between the soldier piles. Lagging should be placed in a timely manner during excavation in order to minimize potential spalling and sloughing. Careful installation of the lagging will be necessary to achieve bearing against the retained earth. The backfill of the lagging should consist of one sack sand-cement slurry or compacted moistened granular soil. It should be noted that backfill of the lagging with compacted granular soil may result in continuation of caving as the excavation depth progresses. Means and methods are per the contractor in order to ultimately ensure full bearing of retained earth to the lagging. The soldier piles should be designed for the full anticipated lateral pressure, however, the pressure on the lagging will be less due to soil arching between the piles. We recommend that the lagging be designed for the recommended earth pressure, but may be limited to a maximum value of 400 psf if surcharge loads are not present. Lagging placed behind the solider piles will negate the soil arching effect.

It is difficult to accurately predict the amount of deflection of the shored mass. It should be realized, however, that some deflection will occur. The shoring should be designed to limit deflection to within tolerable limits. If greater deflection occurs during construction, additional bracing may be necessary. In areas where less deflection is desired, such as adjacent to existing settlement sensitive improvements, the shoring should be designed for higher lateral earth pressures.

For piles spaced a minimum of 2.5 pile diameters on-center, an allowable passive pressure of 500 pcf may be used for passive resistance. The provided passive pressure is based on an arching factor of 2 (e.g., 250 pcf x 2) and should be limited to a maximum of 10 times the value provided above (e.g., 500 pcf to a maximum of 5,000 psf). The passive pressure is only applicable for level (5 horizontal feet to 1-foot vertical or flatter) soil conditions. To develop the full lateral value, provisions should be made to assure firm contact between the soldier piles and the undisturbed soils. The concrete placed in the soldier pile excavation below the excavated level should be of adequate strength to transfer the imposed loads to the surrounding soils. Structural designer should incorporate appropriate factor of safety and/or load factor in design. The provided allowable passive pressure is based on a factor of safety of 1.5.

The contractor should evaluate the potential drilling conditions when planning the installation methods, refer to Section 4.12.

4.7 Soil Corrosivity

Although not corrosion engineers (LGC Geotechnical is not a corrosion consultant), several governing agencies in Southern California require the geotechnical consultant to determine the corrosion potential of soils to buried concrete and metal facilities. We therefore present the results of our testing with regard to corrosion for the use of the client and other consultants, as they determine necessary.

Corrosion testing indicated soluble sulfate content less than 0.02 percent, chloride content of 82 parts per million (ppm), pH value of 7.7, and minimum resistivity of 1,000 ohm-cm. Based on Caltrans Corrosion Guidelines (2015), soils are considered corrosive if the pH is 5.5 or less, or the chloride concentration is 500 ppm or greater, or the sulfate concentration is 2,000 ppm (0.2 percent) or greater. Based on the test results, soils are not considered corrosive using Caltrans criteria.

Based on laboratory sulfate test results, the near surface soils have a severity categorization of "Not Applicable" and are designated to a class "S0" per ACI 318, Table 19.3.1.1 with respect to sulfates.

Concrete in direct contact with the onsite soils can be designed according to ACI 318, Table 19.3.2.1 using the "S0" sulfate classification.

Laboratory testing may need to be performed at the completion of grading by the project corrosion engineer to further evaluate the as-graded soil corrosivity characteristics. Accordingly, revision of the corrosion potential may be needed, should future test results differ substantially from the conditions reported herein. The client and/or other members of the development team should consider this during the design and planning phase of the project and formulate an appropriate course of action.

4.8 Preliminary Pavement Recommendations

The following preliminary minimum asphalt concrete (AC) pavement sections provided in Table 7 are based on an assumed R-value of 35 for Traffic Indices of 5.0, 6.0 and 6.5. These recommendations must be confirmed with R-value testing of representative near-surface soils at the completion of earthwork and after underground utilities have been installed and backfilled. Final street sections should be confirmed by the project civil engineer based upon the final design Traffic Index. If requested, additional sections may be provided based on other traffic index values. It is our understanding that the County of Los Angeles follows the Caltrans Highway Design Manual which requires a minimum pavement section consisting of 4.2 inches of asphalt concrete over 4.2 inches of aggregate base (AB). Should the City of Monrovia have more stringent requirements, updated pavement recommendations can be provided.

TABLE 7

Preliminary Asphalt Concrete Paving Section Options

Assumed Traffic Index	5.0	6.0	6.5
R -Value Subgrade	35	35	35
AC Thickness	4.2 inches	4.2 inches	4.2 inches
Aggregate Base Thickness	4.2 inches	5.0 inches	6.5 inches

The pavement section thicknesses provided above are considered minimum thicknesses. Increasing the thickness of any or all of the above layers will reduce the likelihood of the pavement experiencing distress during its service life. The above recommendations are based on the assumption that proper maintenance and irrigation of the areas adjacent to the pavement will occur through the design life of the pavement. Failure to maintain a proper maintenance and/or irrigation program may jeopardize the integrity of the pavement.
Earthwork recommendations regarding aggregate base and subgrade are provided in the previous section "Site Earthwork" and the related sub-sections of this report.

4.9 Nonstructural Concrete Flatwork

Nonstructural concrete flatwork (such as sidewalks, patios/entryways etc.) has a potential for cracking due to changes in soil volume related to soil-moisture fluctuations. To reduce the potential

for excessive cracking and lifting, concrete should be designed in accordance with the minimum guidelines outlined in Table 8. These guidelines will reduce the potential for irregular cracking and promote cracking along construction joints, but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

TABLE 8

Preliminary Geotechnical Parameters for Nonstructural Concrete Flatwork Placed on Very Low to Low Expansion Potential Subgrade

	Sidewalks	**Patios/Entryways**	**City Sidewalk Curb and Gutters**
Minimum Thickness (in.)	4 (nominal)	4 (full)	City/Agency Standard
Presoaking	Wet down prior to placing	Wet down prior to placing	City/Agency Standard
Reinforcement	—	No. 3 at 24 inches on centers	City/Agency Standard
Thickened Edge (in.)	—	—	City/Agency Standard
Crack Control Joints	Saw cut or deep open tool joint to a minimum of $^1/_3$ the concrete thickness	Saw cut or deep open tool joint to a minimum of $^1/_3$ the concrete thickness	City/Agency Standard
Maximum Joint Spacing	5 feet	6 feet	City/Agency Standard
Aggregate Base Thickness (in.)	—	—	City/Agency Standard

To reduce the potential for flatwork to separate from the building foundations, the owner may elect to install dowels to tie these two elements together.

4.10 Control of Surface Water and Drainage Control

From a geotechnical perspective, we recommend that compacted finished grade soils adjacent to proposed structures be sloped away from the proposed structure and towards an approved drainage device or unobstructed swale. Drainage swales, wherever feasible, should not be constructed within 5 feet of buildings. Where lot and building, geometry necessitates that the drainage swales be routed

closer than 5 feet to structural foundations, we recommend the use of area drains together with drainage swales. Drainage swales used in conjunction with area drains should be designed by the project civil engineer so that a properly constructed and maintained system will prevent ponding within 5 feet of the foundation. Code compliance of grades is not the purview of the geotechnical consultant.

Planters with open bottoms adjacent to buildings should be avoided. Planters should not be designed adjacent to buildings unless provisions for drainage, such as catch basins, liners, and/or area drains, are made. Overwatering must be avoided.

4.11 Subsurface Infiltration and Dry Well Water Percolation Design

Infiltration testing was performed within two relatively shallow small-diameter borings and dry well testing was performed in a relatively deep large-diameter boring. Recommendations for both shallow stormwater infiltration and deep dry well percolation design are provided in the sections below.

Shallow Surface Infiltration: The design infiltration rate is determined by dividing the measured infiltration rate by a series of reduction factors including; test procedure (RF_t), site variability (RF_v) and long-term siltation plugging and maintenance (RF_s). The reduction factor for long-term siltation plugging and maintenance (RF_s) is the purview of the infiltration system designer per the Los Angeles County testing guidelines (2017). The test procedure reduction factor and recommended site variability reduction factor applied to the measured infiltration rate is provided below in Table 9a. The design infiltration rate is the measured percolation rate divided by the total reduction factor (RF_t x RF_v x RF_s).

TABLE 9a

Shallow Surface Infiltration - Reduction Factors Applied to Measured Infiltration Rate

Consideration	Reduction Factor
Test procedure, boring percolation, RF_t	2
Site variability, number of tests, etc., RF_v	2
Long-term siltation plugging and maintenance, RF_s	Per Infiltration Designer
Total Reduction Factor, RF = RF_t x RF_v x RF_s	**TBD**

Per the requirements of the Los Angeles County testing guidelines (2017), subsurface materials shall have a design infiltration rate equal to or greater than 0.3 inches per hour. Based on the minimum Reduction Factor of 4 calculated above (not including long-term siltation plugging and maintenance), the infiltration tests generally do not meet the minimum requirements of the County of Los Angeles testing guidelines; therefore, considering the results of the field infiltration test indicating unacceptable infiltration rates and that the upper approximately 25 feet of onsite native soils are considered susceptible to hydro-collapse, we do not recommend that stormwater be intentionally infiltrated into subsurface soils at a depths shallower than approximately 25 to 30 feet below existing grade.

Subsurface Dry Well Percolation: The long-term infiltration rate is determined by dividing the raw measured infiltration rate by a series of reduction factors including; test procedure (RF_t), site variability (RF_v) and long-term siltation plugging and maintenance (RF_s). The reduction factor for long-term siltation plugging and maintenance (RF_s) is the purview of the infiltration system designer (project Civil Engineer) per the Los Angeles County testing guidelines (2017). The test procedure reduction factor and recommended site variability reduction factor to be applied to the raw measured infiltration rate are provided below in Table 9b. The long-term infiltration rate is the raw measured infiltration rate divided by the total reduction factor (RF_t x RF_v x RF_s).

TABLE 9b

Dry Well Percolation - Reduction Factors Applied to Measured Infiltration Rate

Consideration	Reduction Factor
Test procedure, dry well percolation test, RF_t	2
Site variability, number of tests, etc., RF_v	1.5
Long-term siltation plugging and maintenance, RF_s	Per Dry Well Designer
Total Reduction Factor, RF = RF_t x RF_v x RF_s	**TBD**

Considering the results of the dry well percolation test indicating acceptable infiltration rates, if required, stormwater may be infiltrated into the subsurface soils via a dry well infiltration system from depths of approximately 30 to 75 feet below existing grade using the values presented in Table 3 and Reduction Factors presented above in Table 9b. We do not recommend stormwater be infiltrated into the subsurface soils at depths shallower than approximately 25 to 30 feet below existing grade. Please note that caving may occur at depths shallower than the target depth of 75 feet below existing grade during excavation of the dry well.

4.12 Pier Shafts for Temporary Shoring

Soldier pile boreholes for temporary shoring should be plumb and free of loose or softened material. Extreme care in drilling, placement of reinforcement steel, and the pouring of concrete will be essential to avoid excessive disturbance of borehole walls. The soldier pile steel section should be installed and the concrete pumped immediately after drilling is completed. If applicable, concrete placement by pumping or tremie tube to the bottom of CIDH excavations is recommended. No soldier pile borehole should be left open overnight. We recommend that pile borings not be drilled immediately adjacent to another pile until the concrete in the other pile has attained its initial set. A representative from LGC Geotechnical should be onsite during the drilling of soldier pile boreholes to verify the assumptions made during the design stages.

The contractor should anticipate difficult drilling conditions due to dense soils and likely the presence of oversize material such as cobbles and boulders. Sandy soils are present at the site and these materials are generally susceptible to caving. Some caving of drilled holes should be anticipated. The contractor should anticipate that any borehole left open for any extended period of time will likely experience

additional caving and possible seepage typically from local irrigation. Refer to the boring logs in Appendix B. If caving occurs during construction of soldier pile boreholes a temporary casing may be required.

4.13 Geotechnical Plan Review

Project plans (grading, foundation, etc.) should be reviewed by this office prior to construction to verify that our geotechnical recommendations have been incorporated. Additional field work and/or modified geotechnical recommendations may be necessary.

4.14 Pre-Construction Monitoring

It is recommended that a program of pre-construction documentation and monitoring be devised and put into practice before the onset of any groundwork.

The monitoring program should include, but not necessarily be limited to, detailed documentation of the existing improvements, buildings and utilities around the site, with particular attention to any distress that is already present prior to the start of work.

4.15 Geotechnical Observation and Testing During Construction

The recommendations provided in this report are based on limited subsurface observations and geotechnical analysis. The interpolated subsurface conditions should be checked in the field during construction by a representative of LGC Geotechnical. Geotechnical observation and testing is required per Section 1705 of the 2016 CBC.

Geotechnical observation and/or testing should be performed by LGC Geotechnical at the following stages:

- During grading (removal bottoms, fill placement, etc.);
- During drilling of pier shafts for temporary shoring;
- During installation of ground improvements;
- During retaining wall backfill and compaction;
- During utility trench backfill and compaction;
- After presoaking building pads and other concrete-flatwork subgrades, and prior to placement of aggregate base or concrete;
- After footing excavation and prior to placing concrete and/or reinforcement;
- Preparation of pavement subgrade and placement of aggregate base; and
- When any unusual soil conditions are encountered during any construction operation subsequent to issuance of this report.

5.0 LIMITATIONS

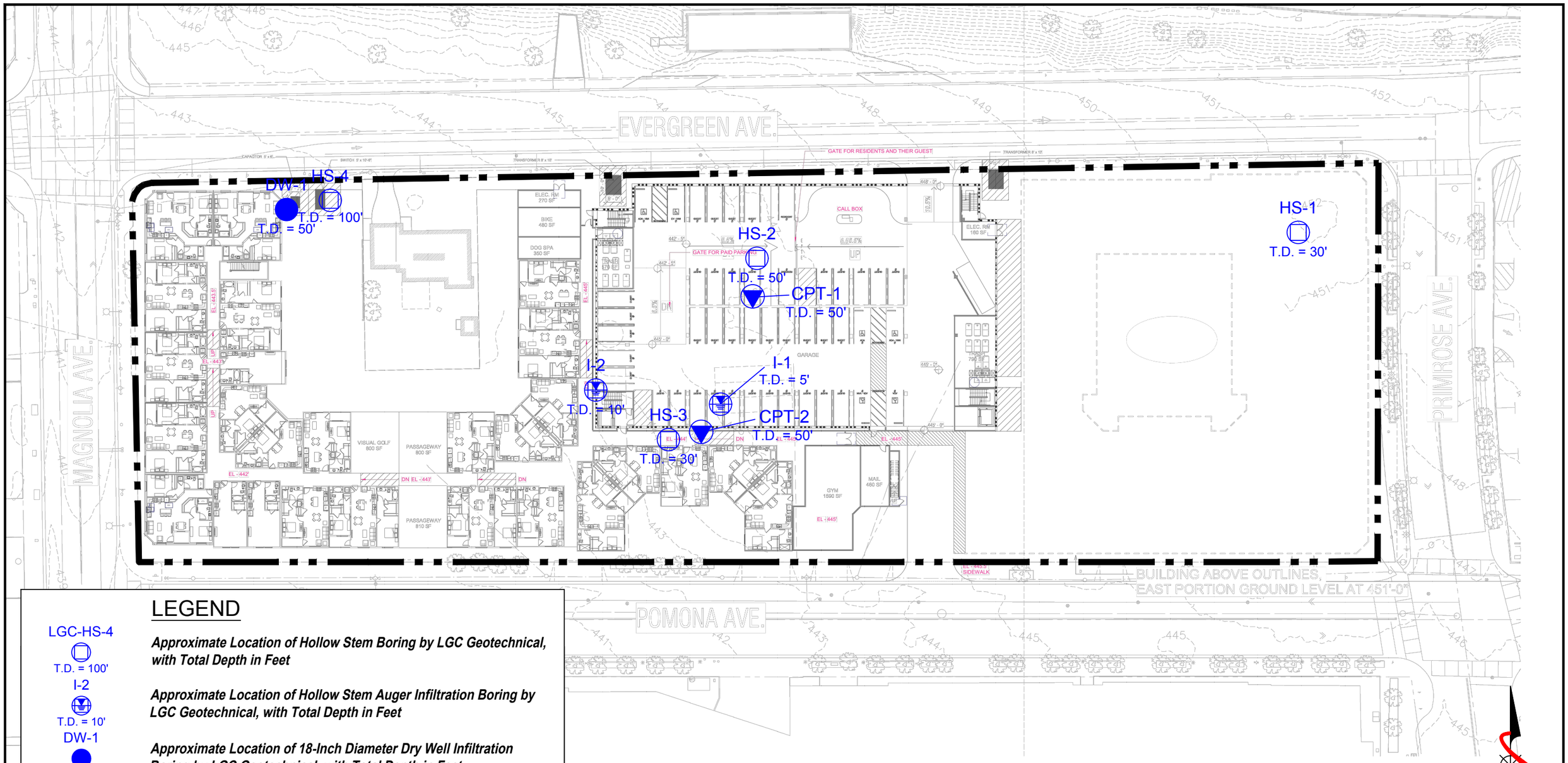
Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is based on data obtained from limited observations of the site, which have been extrapolated to characterize the site. While the scope of services performed is considered suitable to adequately characterize the site geotechnical conditions relative to the proposed development, no practical evaluation can completely eliminate uncertainty regarding the anticipated geotechnical conditions in connection with a subject site. Variations may exist and conditions not observed or described in this report may be encountered during construction.

This report is issued with the understanding that it is the responsibility of the owner, or of his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of the other consultants and incorporated into the plans. The contractor should properly implement the recommendations during construction and notify the owner if they consider any of the recommendations presented herein to be unsafe, or unsuitable.

The findings of this report are valid as of the present date. However, changes in the conditions of a site can and do occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. The findings, conclusions, and recommendations presented in this report can be relied upon only if LGC Geotechnical has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site. This report is intended exclusively for use by the client, any use of or reliance on this report by a third party shall be at such party's sole risk.

In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and modification.



LEGEND

LGC-HS-4
T.D. = 100'

Approximate Location of Hollow Stem Boring by LGC Geotechnical, with Total Depth in Feet

I-2
T.D. = 10'

Approximate Location of Hollow Stem Auger Infiltration Boring by LGC Geotechnical, with Total Depth in Feet

DW-1
T.D. = 50'

Approximate Location of 18-Inch Diameter Dry Well Infiltration Boring by LGC Geotechnical, with Total Depth in Feet

CPT-2
T.D. = 50'

Approximate Location of Cone Penetration Test Boring by LGC Geotechnical, with Total Depth in Feet

Approximate Limits of This Project

LGC Geotechnical, Inc.

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131 Calle Iglesia, Ste. 200
San Clemente, CA 92672
TEL (949) 369-6141 FAX (949) 369-6142

FIGURE 2
Boring Location Map

PROJECT NAME	*MWIG- Evergreen*
PROJECT NO.	*18176-01*
ENG. / GEOL.	*RLD*
SCALE	*1" = 50'*
DATE	*December 2018*

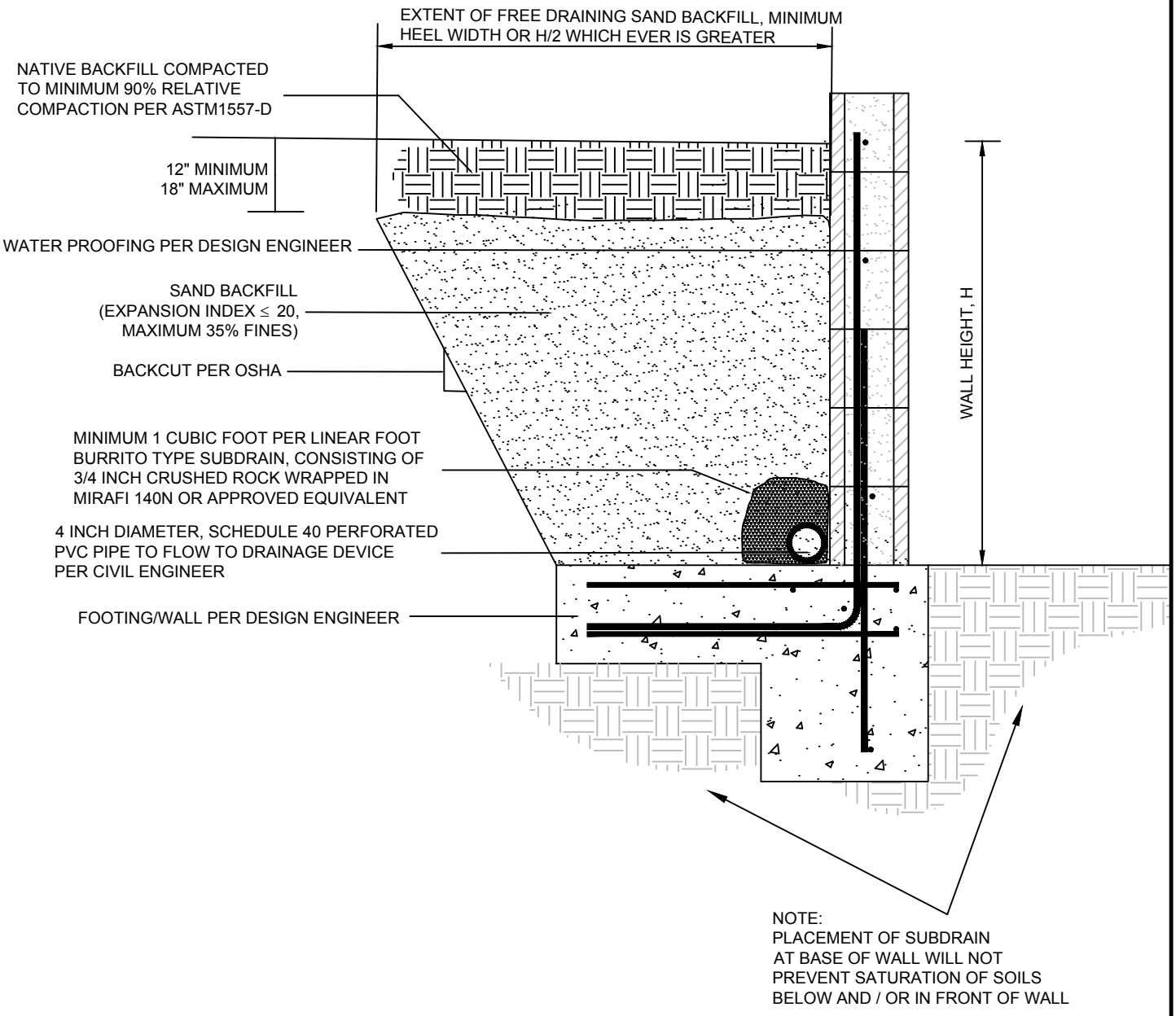

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FIGURE 3
Retaining Wall Backfill Detail

PROJECT NAME	MWG- Evergreen
PROJECT NO.	18176-01
ENG.	RLD
SCALE	Not to Scale
DATE	December 2018

Appendix A
References

APPENDIX A

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Appendix B
Boring and CPT Logs

Geotechnical Boring Log Borehole HS-1

Date: 10/22/2018	**Drilling Company:** Yellow Jacket Drilling
Project Name: Evergreen	**Type of Rig:** CME-85
Project Number: 18176-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~452' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 2

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
450	0	B-1					SM	**@0' to 5' Artificial Fill - Older (afo):** @0' Approximately 3 inch asphalt parking lot @0.25' Silty SAND: brown, slightly moist, medium dense	
	5		R-1	4 6 7	106.0	1.3	SP	**@5' to T.D. Young Alluvial Fan Deposits (Qyf):** @7.5' SAND with Gravel: pinkish grey, dry, medium dense; clasts generally subangular, <1 inch	
445			R-2	8 29 23	114.5	1.6	SW	@7.5' SAND with Gravel: pinkish grey, dry, dense; crushed gravel >1 inch	
	10		R-3	7 9 11	111.3	4.7	SM	@10' Silty SAND: olive brown, slightly moist, medium dense; scattered gravel ~1 inch	
440									
	15		SPT-1	5 8 8		3.3		@15' Silty SAND with Gravel: brown, dry, medium dense	
435									
	20		R-4	7 11 12	116.1	4.8		@20' Silty SAND with Gravel: brown, slightly moist, medium dense; generally fine grained sand with some coarse grains	
430									
	25		SPT-2	5 6 7		5.2		@25' Silty SAND: brown, slighly moist, medium dense; fine and medium grained sand with occasional coarser grains, scattered gravel <1/2 inch	
425									
	30								

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SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE (CA Modified Sampler)
G	GRAB SAMPLE
SPT	STANDARD PENETRATION TEST SAMPLE
▽	GROUNDWATER TABLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 11/8/2018

Geotechnical Boring Log Borehole HS-1

Date: 10/22/2018	**Drilling Company:** Yellow Jacket Drilling
Project Name: Evergreen	**Type of Rig:** CME-85
Project Number: 18176-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~452' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 2

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-5	20 31 35	96.0	1.8	SP	@30' SAND: pinkish grey, dry, very dense; scattered gravel	
420								Total Depth = 31.5' Groundwater Not Encountered Backfilled with Cuttings and Capped with AC cold patch on 10/22/2018	
	35								
415									
	40								
410									
	45								
405									
	50								
400									
	55								
395									
	60								

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CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-2

Date: 10/22/2018 | **Drilling Company:** Yellow Jacket Drilling

Project Name: Evergreen | **Type of Rig:** CME-85

Project Number: 18176-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~447' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
445	0	B-1	R-1	8 9 12	110.4	4.1	SM	**@0' to 5' Artificial Fill - Older (afo):** @0' Silty SAND: brown, slightly dry, loose; some rootlets, scattered gravel @2.5' Silty SAND: brown, dry, medium dense; scattered gravel 1" minus, angular clasts	DS MD -#200 EI CR
	5		R-2	8 7 7	112.6	4.8		**@5' to T.D. Young Aluvial Fan Deposits (Qyf):** @5' Silty SAND: brown, dry, medium dense	-#200 CN
440			R-3	4 5 7	108.3	8.8	SM-ML	@7.5' Silty SAND to Sandy SILT: brown, slightly moist, medium dense/stiff; scattered gravels ~1/2" minus	
	10		R-4	4 5 8	106.0	7.6	SM	@10' Silty SAND: brown, slightly moist, medium dense; scattered gravels ~1/2" minus	-#200 CN
435									
	15		SPT-1	4 4 6		3.6	SP	@15' SAND with Gravel: brown, dry, medium dense; scarce gravel	
430									
	20		R-5	7 13 19	116.7	5.6	SM	@20' Silty SAND: brown, slightly moist, medium dense; angular clasts ~1/2" minus @22' drilling through cobbles	
425									
	25		SPT-2	4 4 4		8.5		@25' Silty SAND: brown, moist, medium dense; better grading than above	-#200
420									
	30								

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⏚	GROUNDWATER TABLE

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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 11/12/2018

Geotechnical Boring Log Borehole HS-2

Date: 10/22/2018	**Drilling Company:** Yellow Jacket Drilling
Project Name: Evergreen	**Type of Rig:** CME-85
Project Number: 18176-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~447' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 2

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
415	30		R-6	4 9 10	110.1	5.2	SM	@30' Silty SAND: brown, slightly moist, medium dense; generally fine and medium grained sand	
410	35		SPT-3	9 11 12		3.3	SP	@35' SAND: grey-brown, dry, dense; angular grains	
405	40		R-7	13 15 15	113.8	4.3		@40' SAND: orangish-brown, dry, medium dense	
400	45		SPT-4	6 9 14		10.3	SM	@45' Silty SAND: brown, moist, dense; generally fine grained sand	
			R-8	22 27 27	108.5	2.9		@50' Silty SAND: brown, dry, dense	
395	50							Total Depth = 50' Groundwater Not Encountered Backfilled with Cuttings on 10/22/2018	
390	55								
	60								

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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-3

Date: 10/22/2018	**Drilling Company:** Yellow Jacket Drilling
Project Name: Evergreen	**Type of Rig:** CME-85
Project Number: 18176-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~444' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 2

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
440	0	B-1					SM	**@0' to 5' Artificial Fill - Older (afo):** @0' Approximately 3" asphalt parking lot @0.25 Silty SAND with Gravel: brown, slightly moist, loose; brick pieces in cuttings, small plastic litter	
	5		R-1	6 6 6	103.3	5.0	SM	**@5' to T.D. Young Alluvial Fan Deposits (Qyf):** @5' Silty SAND with Gravel: brown, slightly moist, medium dense	
435			R-2	8 6 7	112.9	10.5		@7.5' Silty SAND: brown, moist, medium dense; scattered gravel	
	10		R-3	6 6 9	111.9	10.0		@10' Silty SAND: brown, moist, medium dense; micaceous, scarce to no gravel	
430									
	15		SPT-1	4 5 8		6.2		@15' Silty SAND: brown, slightly moist, medium dense; scattered gravel ~1/2" minus	
425									
	20		R-4	3 4 6	112.0	11.1		@20' Silty SAND: brown, moist, loose; micaceous sand, scattered pea gravel	
420									
	25		SPT-2	2 4 4		12.9		@25'Silty SAND: brown, moist, medium dense; scattered pea gravel	
415								@27' hard drilling	
	30								

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CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 11/12/2018

Geotechnical Boring Log Borehole HS-3

Date: 10/22/2018	**Drilling Company:** Yellow Jacket Drilling
Project Name: Evergreen	**Type of Rig:** CME-85
Project Number: 18176-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~444' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 2

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-5	10 12 14	91.9	4.3		@30' Silty SAND: grey-brown, dry, medium dense; micaceous sand, moderate grading	
410	35							Total Depth = 31.5' Groundwater Not Encountered Backfilled with Cuttings and Capped with AC cold patch on 10/22/2018	
405	40								
400	45								
395	50								
390	55								
385	60								

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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-4

Date: 11/9/2018 | **Drilling Company:** 2R

Project Name: Evergreen | **Type of Rig:** Track Mounted

Project Number: 18176-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~444' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0						SM	**@0' to 5' Artificial Fill - Older (afo):** @0' Silty SAND: brown, dry, loose; grass rootlets; scattered gravel in upper several feet	
440									
	5		R-1	30 34 45	125.4	3.5		**@5' to T.D. Young Alluvial Fan Deposits (Qyf):** @5' Silty SAND: greyish brown, dry, very dense	
435									
	10		SPT-1	7 7 8		4.4		@10' Silty SAND: brown, dry, medium dense; generally fine to medium grained sand	
430									
	15		R-2	12 19 18	122.2	7.8		@15' Silty SAND with gravel: brown, moist, medium dense; scattered gravel approximately 1" minus	
425									
	20		SPT-2	13 19 24		5.1		@20' Silty SAND: brown, slightly moist, very dense; gravels approximately 1" minus with subangular shape	
420									
	25		R-3	14 21 25	118.0	3.7	SP	@25' SAND: light rusty brown, dry, dense; subangular and angular clasts @27' chatter on drill bit; rocky	
415									
	30								

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SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE (CA Modified Sampler)
G	GRAB SAMPLE
SPT	STANDARD PENETRATION TEST SAMPLE
▽	GROUNDWATER TABLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 11/12/2018

Geotechnical Boring Log Borehole HS-4

Date: 11/9/2018 | **Drilling Company:** 2R

Project Name: Evergreen | **Type of Rig:** Track Mounted

Project Number: 18176-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~444' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		SPT-3	12 12 9		4.0		@30' SAND: grayish brown, slightly moist, medium dense, some blebs of silty sand	
410									
	35		R-4	20 28 28	119.2	3.8		@35' SAND: brown, dry, dense; scarce gravels	
405									
	40		SPT-4	9 15 18		3.5	SM	@40' Silty SAND with gravel: brown, dry, dense; pea gravel	
400									
	45		R-5	15 24 41	121.3	9.9		@45' Silty SAND: brown, moist, very dense; scarce pea gravel	
395									
	50		SPT-5	8 13 12		13.8	SC	@50' Clayey SAND: brown, very moist, dense; lightly micaceous, generally medium grained	
390									
	55		R-6	22 39 50/5.5"	120.0	4.7	SP	@55' SAND with Gravel: brown, slightly moist, very dense	
385									
	60								

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Geotechnical Boring Log Borehole HS-4

Date: 11/9/2018 | **Drilling Company:** 2R

Project Name: Evergreen | **Type of Rig:** Track Mounted

Project Number: 18176-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~444' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		SPT-6	7 14 12		10.6	SC	@60' Clayey SAND: brown, moist, dense; lightly micaceous, generally medium grained sand	
380									
	65		R-7	21 26 40	125.0	12.0	SM	@65' Silty SAND: brown, moist, very dense; scattered very coarse sand to small gravels <1/8"	
375									
	70		SPT-7	22 25 30		3.9	SP	@70' SAND: rusty brown, dry, very dense; scattered small gravels @73' hard drilling- cobbles, slowed down a lot	
370									
	75		R-8	37 50/4"	128.8	2.9	GP	@75' GRAVEL with Sand: brown, dry, very dense; granitic and sedimentary clasts >1.5"	
365									
	80		SPT-8	36 50/3.5"		3.1	SP	@80' SAND with Gravel: grey, dry, very dense; rounded gravel, metamorphic clasts	
360									
	85		R-9	50/4"	104.3	3.5	SP-SM	@85' SAND with Silt: greyish brown, dry, very dense; generally scattered gravel < 1/2" in a coarse sand	
355									
	90								

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RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-4

Date: 11/9/2018 | **Drilling Company:** 2R

Project Name: Evergreen | **Type of Rig:** Track Mounted

Project Number: 18176-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~444' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90		SPT-9	24 24 32		9.5	SM	@90' Silty SAND: brown, moist, very dense; scarce gravel approximately 1/4"	
350									
	95		R-10	52/6"	115.3	4.4	SP	@95' SAND with Gravel: brown, slightly moist, very dense; small gravel approximately 1/4" minus generally medium grained sand	
345									
	100		SPT-10	36 37 40		5.0		@100' SAND: rusty brown, slightly moist, very dense; scarce gravel approximately 1/2" minus	
340								Total Depth = 101.5' Groundwater Not Encountered Backfilled with Cuttings on 11/9/2018	
	105								
335									
	110								
330									
	115								
325									
	120								

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AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole I-1

Date: 10/22/2018 | **Drilling Company:** Yellow Jacket Drilling

Project Name: Evergreen | **Type of Rig:** CME-85

Project Number: 18176-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~446' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
445	0						SM	**@0' to T.D. Artificial Fill - Older (afo):** @0' Approximately 3 inch asphalt concrete @ 0.25' Silty SAND: brown, slightly moist, medium dense; scattered gravel, difficult to hand auger, small pieces of brick, concrete and metal in fill material	
440	5							@5' Silty SAND: brown, slightly moist, medium dense; scattered gravel	
435	10							Total Depth = 5' Groundwater Not Encountered Backfilled with Cuttings and Capped with AC cold patch on 10/23/2018	
430	15							3" perforated pipe installed and presoaked on 10/22/2018. Pipe removed and boring backfilled with cuttings on 10/23/2018.	
425	20								
420	25								
	30								

LGC Geotechnical, Inc.

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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 11/8/2018

Geotechnical Boring Log Borehole I-2

Date: 10/22/2018	**Drilling Company:** Yellow Jacket Drilling
Project Name: Evergreen	**Type of Rig:** CME-85
Project Number: 18176-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~444' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 1 of 1

Logged By ARN
Sampled By ARN
Checked By RLD

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
440	0						SM	**@0' to 7.5' Artificial Fill - Older (afo):** @0' Approximately 3" asphalt concrete @ 0.25' Silty SAND: brown, slightly moist, medium dense; generally fine-grained sand	
	5		R-1	26 19 13	119.0	3.0		@5' Silty SAND: grey-brown, dry, medium dense; scattered gravel **@7.5' to T.D. Young Alluvial Fan Deposits (Qyf):**	
435			R-2	6 6 7	110.1	6.0		@7.5' Silty SAND: brown, slightly moist, medium dense; scattered gravel @10' Silty SAND: brown, slightly moist, medium dense	
	10							Total Depth = 10' Groundwater Not Encountered Backfilled with Cuttings and Capped with AC cold patch on 10/23/2018	
430	15							3" perforated pipe installed and presoaked on 10/22/18. Pipe removed and boring backfilled with cuttings on 10/23/18	
425	20								
420	25								
415	30								

LGC Geotechnical, Inc.

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RV	R-VALUE
-#200	% PASSING # 200 SIEVE

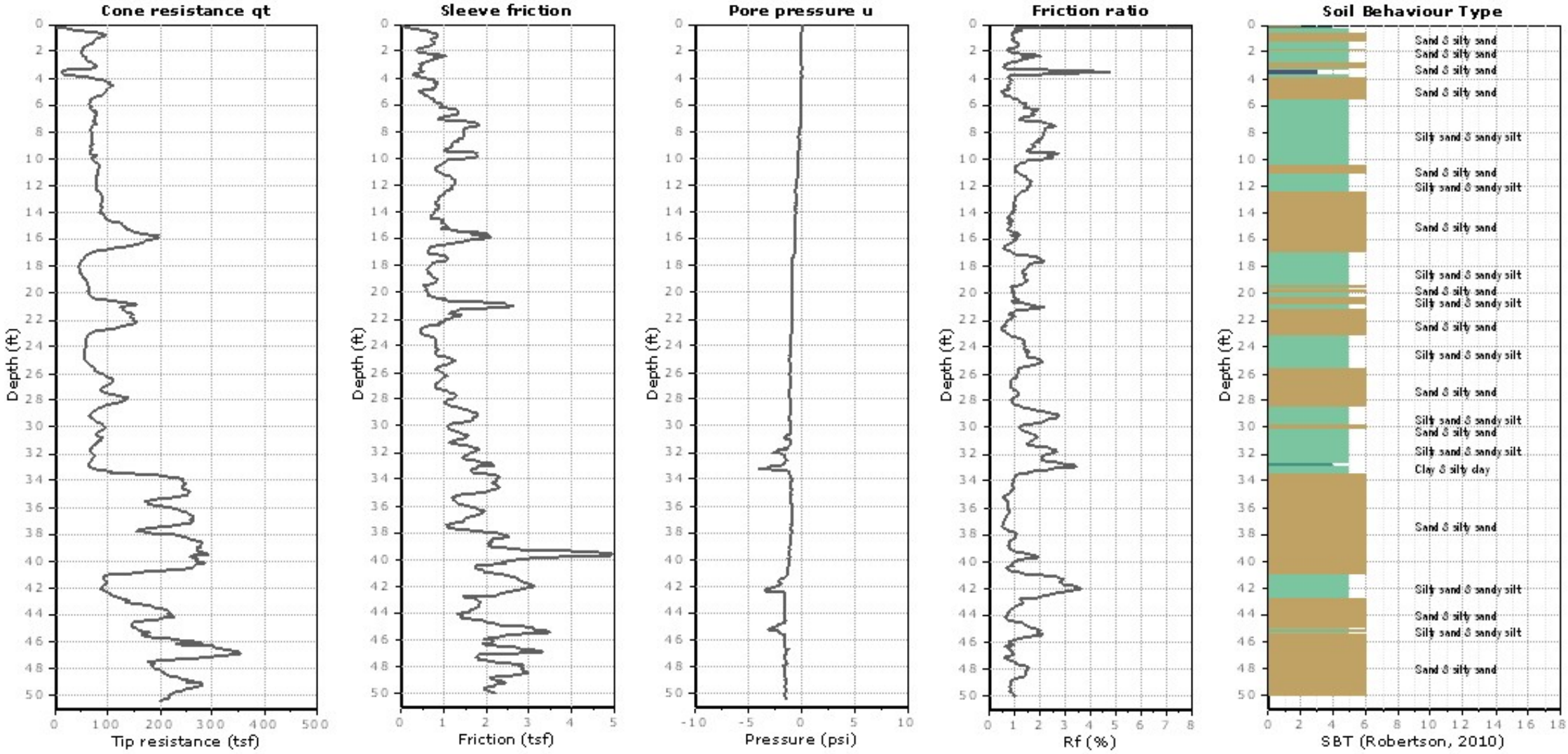
Last Edited: 11/12/2018

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

CPT-1

Project: **LGC Geotechnical**
Location: **234 W. Evergreen Ave, Monrovia, CA**

Total depth: 50.40 ft, Date: 11/27/2018
Cone Type: Vertek

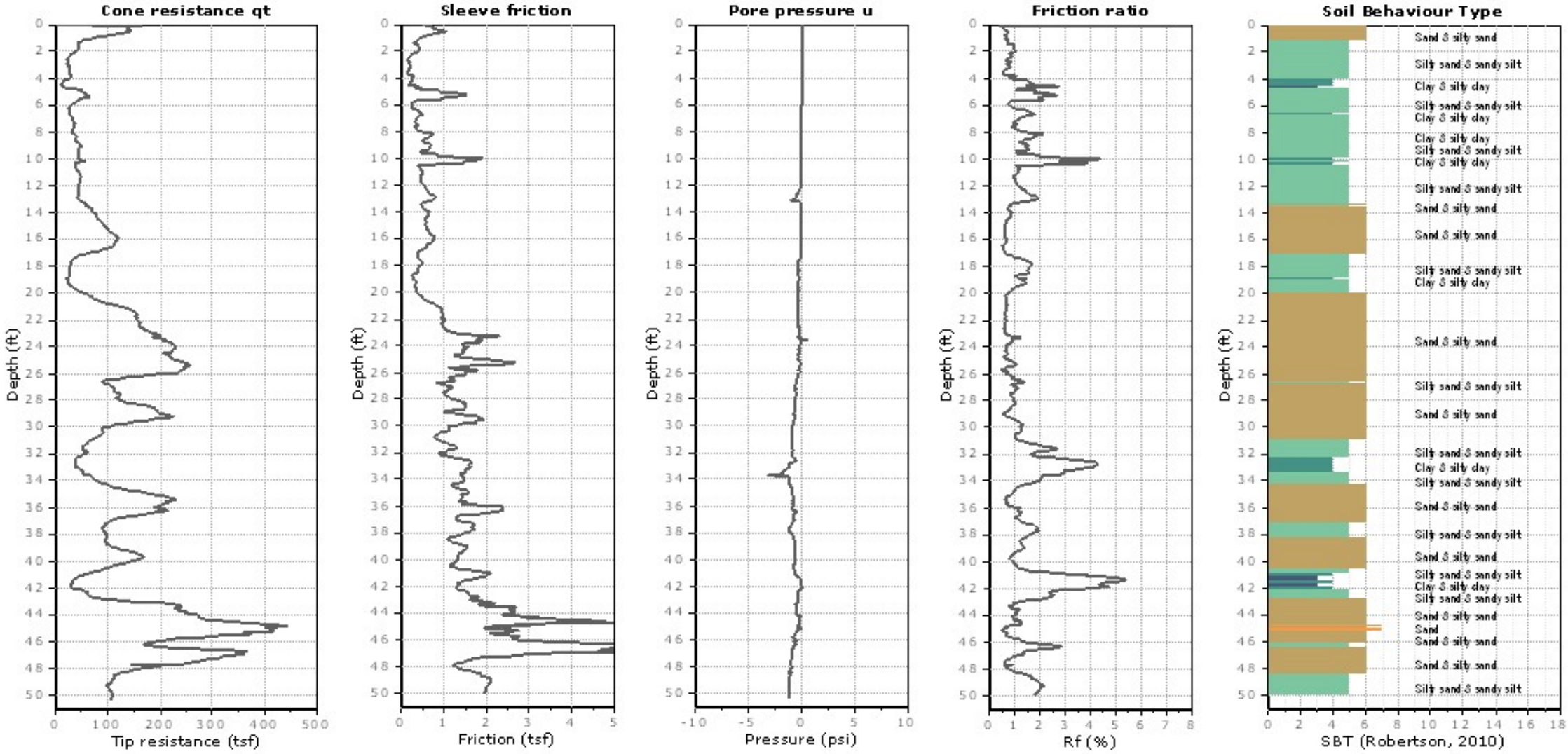


Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

CPT-2

Project: **LGC Geotechnical**
Location: **234 W. Evergreen Ave, Monrovia, CA**

Total depth: 50.34 ft, Date: 11/27/2018
Cone Type: Vertek



Appendix C
Laboratory Test Results

APPENDIX C

Laboratory Test Results

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soils. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Moisture and Density Determination Tests: Moisture content (ASTM D2216) and dry density determinations (ASTM D2937) were performed on driven samples obtained from the test borings. The results of these tests are presented on the boring logs in Appendix B. Where applicable, only moisture content was determined from SPT or disturbed samples.

Grain Size Distribution/Fines Content: Representative samples were dried, weighed, and soaked in water until individual soil particles were separated (per ASTM D421) and then washed on a No. 200 sieve (ASTM D1140). Where applicable, the portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sieve set in accordance with ASTM D6913 (sieve) or ASTM D422 (sieve and hydrometer).

Sample Location	Description	% Passing # 200 Sieve
HS-2 @ 0-5 ft	Silty Sand	27
HS-2 @ 5 ft	Silty Sand	24
HS-2 @ 10 ft	Silty Sand	33
HS-2 @ 25 ft	Silty Sand	31

Direct Shear: One direct shear test was performed on a sample remolded to 90 percent relative compaction. The ring samples were soaked for a minimum of 24 hours prior to testing. The samples were tested under various normal loads using a motor-driven, strain-controlled, direct-shear testing apparatus (ASTM D3080). The plot is provided in this Appendix.

Consolidation: Two consolidation tests were performed per ASTM D2435. A sample (2.4 inches in diameter and 1 inch in height) was placed in a consolidometer and increasing loads were applied. The sample was allowed to consolidate under "double drainage" and total deformation for each loading step was recorded. The percent consolidation for each load step was recorded as the ratio of the amount of vertical compression to the original sample height. The consolidation pressure curves are provided in this Appendix.

Laboratory Test Results

Laboratory Compaction: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557. The results of this tests are presented in the table below.

Sample Location	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
HS-2 @ 0-5 ft	Brown silty sand	134.5	8.0

Expansion Index: The expansion potential of a selected representative sample was evaluated by the Expansion Index Test per ASTM D4829.

Sample Location	Expansion Index	Expansion Potential*
HS-2 @ 0-5 ft	0	Very Low

* Per ASTM D4829

Soluble Sulfates: The soluble sulfate contents of a selected sample was determined by standard geochemical methods (CTM 417). The test results are presented in the table below.

Sample Location	Sulfate Content (%)
HS-2 @ 0-5 ft	< 0.02

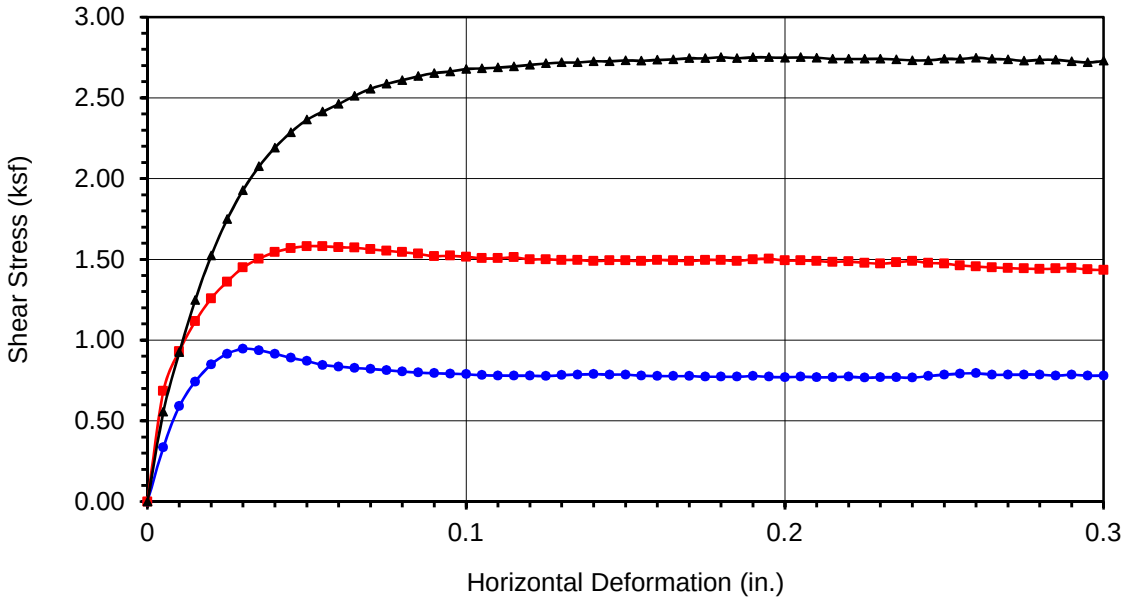
Chloride Content: Chloride content was tested per CTM 422. The results are presented below.

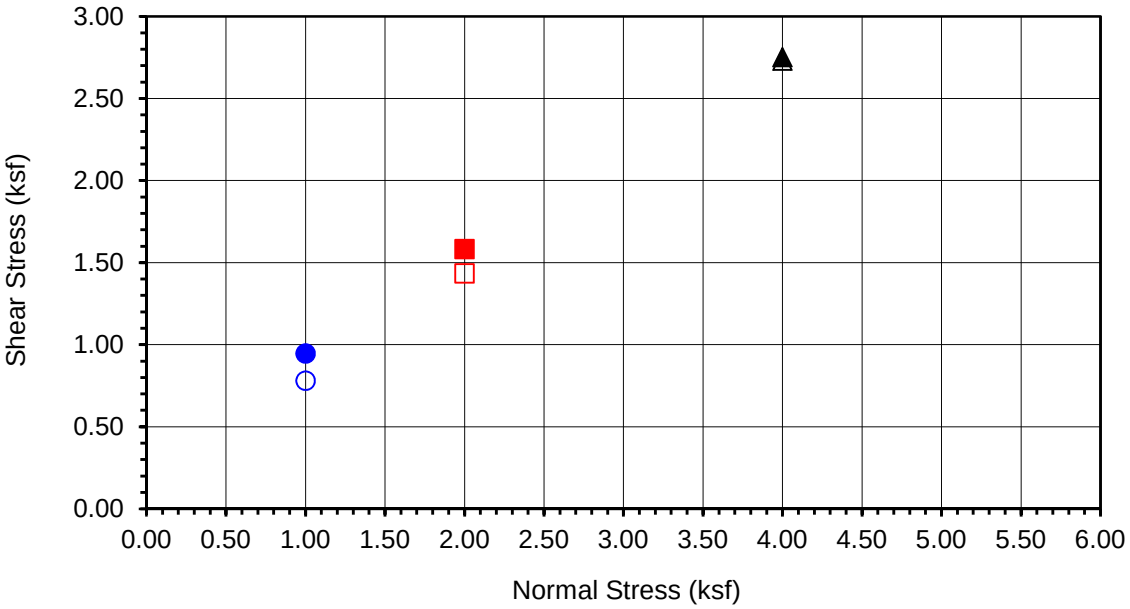
Sample Location	Chloride Content (ppm)
HS-2 @ 0-5 ft	82

Laboratory Test Results

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with CTM 643 and standard geochemical methods. The results are presented in the table below.

Sample Location	pH	Minimum Resistivity (ohms-cm)
HS-2 @ 0-5 ft	7.7	1,000





Boring No.	**HS-2**
Sample No.	**1**
Depth (ft)	**0-5**
Sample Type: 90% Remold	
Soil Identification: Brown silty sand (SM)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.946	■ 1.581	▲ 2.751
Shear Stress @ End of Test (ksf)	○ 0.780	□ 1.434	△ 2.729
Deformation Rate (in./min.)	0.0025	0.0025	0.0025
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	8.40	8.40	8.40
Dry Density (pcf)	120.0	119.4	119.5
Saturation (%)	56.0	55.1	55.3
Soil Height Before Shearing (in.)	0.9910	0.9889	0.9813
Final Moisture Content (%)	13.1	13.0	12.6

DIRECT SHEAR TEST RESULTS

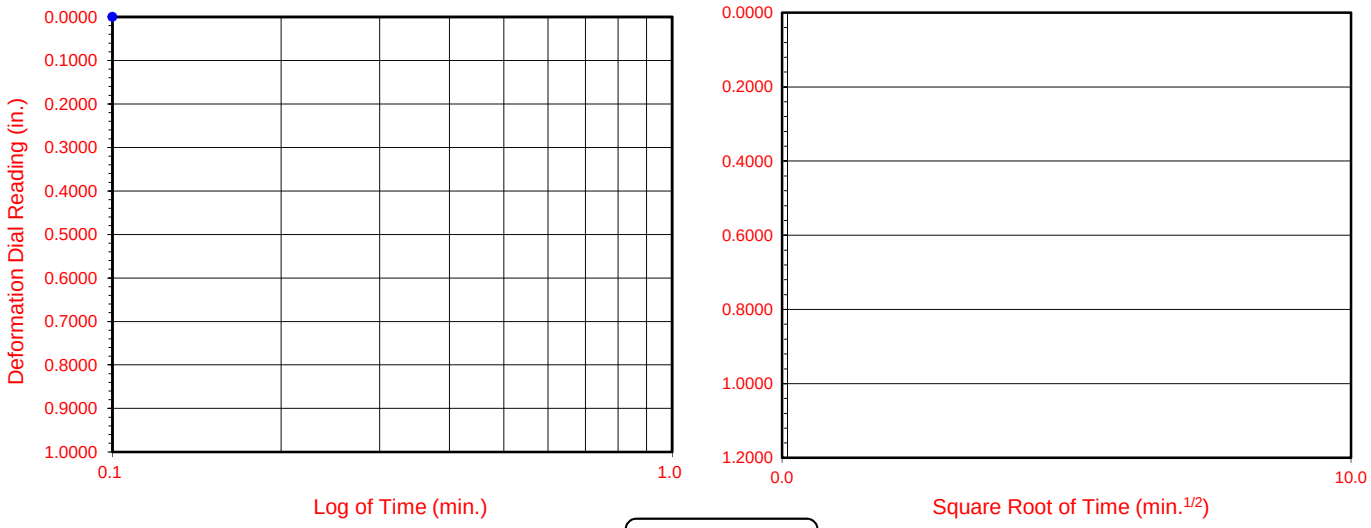
Consolidated Drained - ASTM D 3080

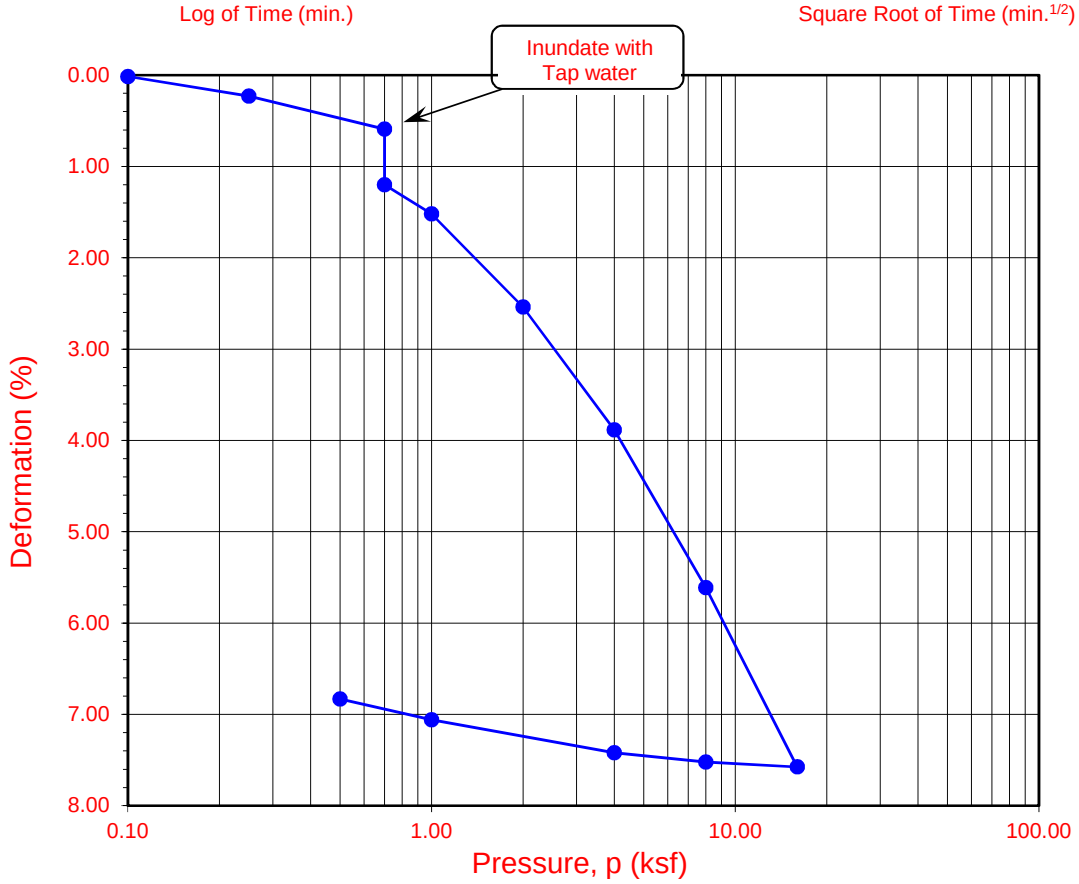
Project No.: 18176-01

Evergreen

11-18

Time Readings





Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-2	**2**	**5**	**4.8**	**14.0**	**112.1**	**118.2**	**0.503**	**0.401**	**26**	**89**

Soil Identification: Brown silty sand (SM)

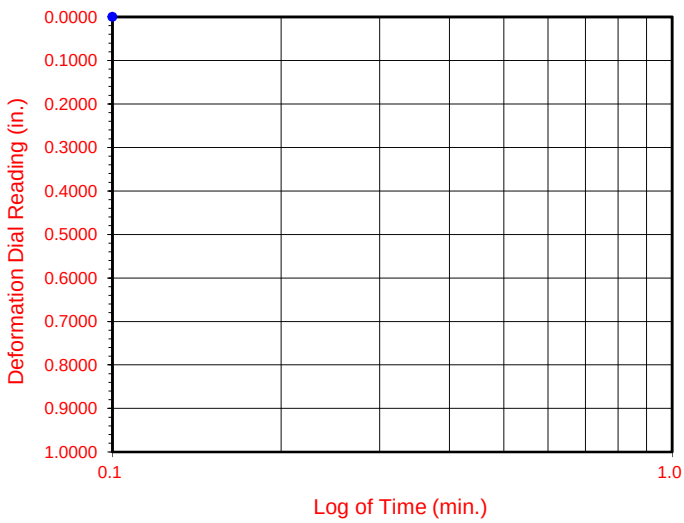
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

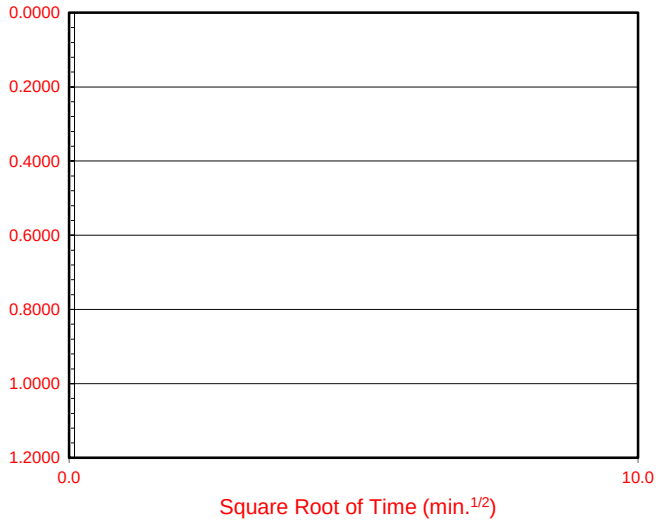
Project No.: 18176-01

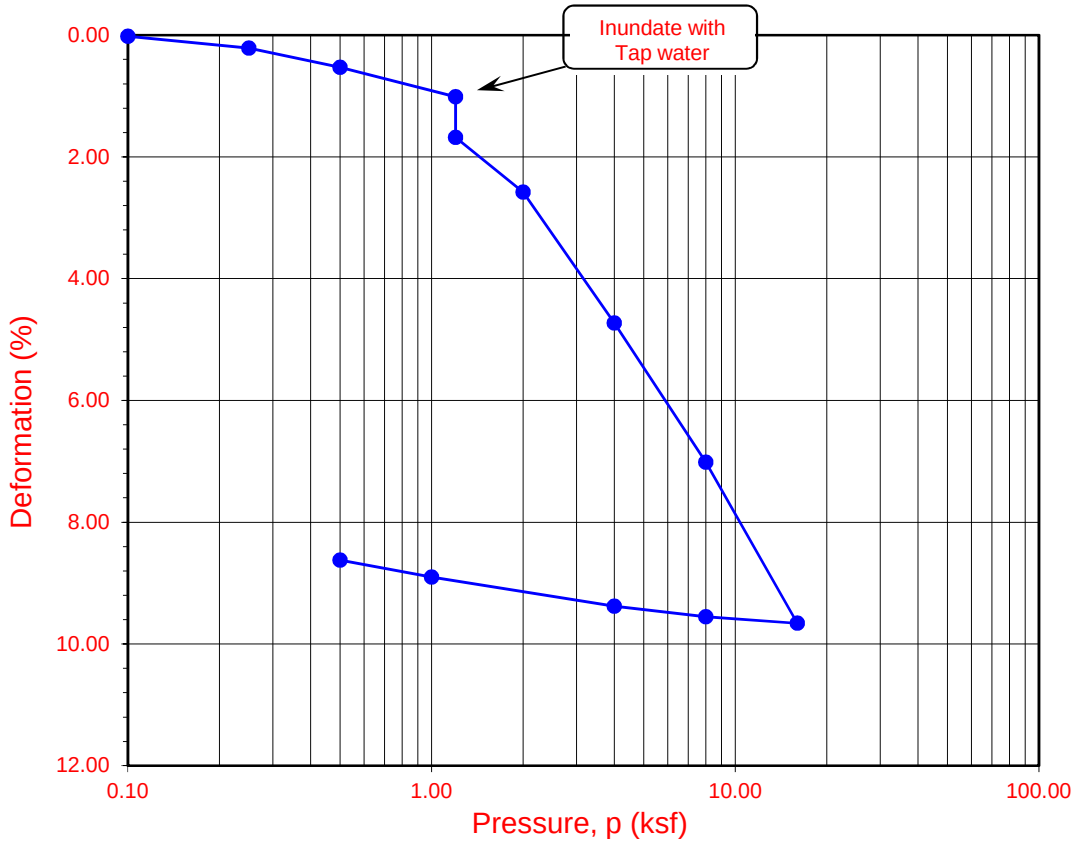
Evergreen

11-18

Time Readings







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-2	**4**	**10**	**7.6**	**15.6**	**108.7**	**116.6**	**0.551**	**0.417**	**37**	**94**

Soil Identification: Brown silty sand (SM)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 18176-01

Evergreen

11-18

Appendix D
Infiltration Test Data

LA County Dry Well Constant Head Percolation Test Data Sheet

LGC Geotechnical, Inc
131 Calle Iglesia Suite A, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Evergreen - Monrovia
Project Number: 18176
Date: 11/16/2018
Location: DW-1
Approximate Test Duration: 5 Hours

Test hole dimensions (if circular)	
Boring Depth (feet)*:	75
Boring Diameter (inches):	18
Perforated Pipe Dia. (in):	4
3/4" Rock Backfill: (y/n)	y
Filter Sock: (y/n)	n

*measured at time of test

Main Test Data

Trial No.	Start Time (24:HR)	Avg Head of Water Above Bottom of Dry Well, H (feet)	Time Interval, Δt (min)	Water Volume Dial Reading (gal)	Volume of Water per Time Interval (gal/Δt)	Volume of Water per Time Interval (ft^3/Δt)	Observed Field Flow Rate (ft^3/s)	Infiltration Surface Area (ft^2)	Raw Measured Infiltration Rate (in/hr)
1	8:00:00 AM	43.5		4797745					
2	8:10:00 AM	43.8	10	4798620	875	116.97	0.19	208.2	40.5
3	8:20:00 AM	44.8	10	4799440	820	109.62	0.18	212.9	37.1
4	8:30:00 AM	44.9	10	4800175	735	98.26	0.16	213.4	33.2
5	8:40:00 AM	45.0	10	4800905	730	97.59	0.16	213.8	32.9
6	8:50:00 AM	45.0	10	4801620	715	95.58	0.16	213.8	32.2
7	9:00:00 AM	44.8	10	4802305	685	91.57	0.15	212.9	31.0
8	9:20:00 AM	44.8	20	4803725	1420	189.83	0.16	212.9	32.1
9	9:40:00 AM	44.8	20	4805135	1410	188.49	0.16	212.9	31.9
10	10:00:00 AM	45.0	20	4806545	1410	188.49	0.16	213.8	31.7
11	10:20:00 AM	45.0	20	4807935	1390	185.82	0.15	213.8	31.3
12	10:40:00 AM	44.6	20	4809285	1350	180.47	0.15	211.9	30.7
13	11:00:00 AM	44.6	20	4810640	1355	181.14	0.15	211.9	30.8
14	11:20:00 AM	44.5	20	4812000	1360	181.81	0.15	211.5	31.0
15	11:40:00 AM	44.6	20	4813355	1355	181.14	0.15	211.9	30.8
16	12:00:00 PM	44.8	20	4814710	1355	181.14	0.15	212.9	30.6
17	12:20:00 PM	44.8	20	4816065	1355	181.14	0.15	212.9	30.6
18	12:40:00 PM	44.7	20	4817410	1345	179.80	0.15	212.4	30.5
19	1:00:00 PM	44.7	20	4818755	1345	179.80	0.15	212.4	30.5
				Total Gallons	**21010**				

Measured Stabilized Flow Rate (ft^3/s) (Including NO Reduction Factors): **0.15**

Raw Measured Infiltration Rate (in/hr) (Including NO Reduction Factors): **30.5**

Sketch:

Notes:

Based on Guidelines from: LA County dated 06/2017
Spreadsheet Revised on: 11/19/2018

LGC Geotechnical, Inc.

Infiltration Test Data Sheet

LGC Geotechnical, Inc
131 Calle Iglesia Suite A, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Evergreen
Project Number: 18176-01
Date: 10/23/2018
Location: I-1

Test hole dimensions (if circular)	
Boring Depth (feet)*:	5
Boring Diameter (inches):	8
Pipe Diameter (inches):	2

*measured at time of test

Test pit dimensions (if rectangular)	
Pit Depth (feet):	
Pit Length (feet):	
Pit Breadth (feet):	

Minimum Pre-Soak Head (D_o):
(What the sounder tape should read)
Boring Depth - 1 ft = 4
The value on the sounder tape should be slightly **Greater** than this value during testing

Pre-Soak /Pre-Test

No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Comments
PS-1	15:40	16:40	60.0	2.50	4.70	2.20	10/22/2018
Pre-Test	10:36	10:46	10.0	3.95	4.3	0.35	
Pre-Test	10:36	11:06	30.0	3.95	5	1.05	

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Surface Area of Test Section (feet ^2)	Raw Percolation Rate (in/hr)
1	11:06	11:16	10.0	2.92	3.40	0.48	4.20	2.9
2	11:16	11:26	10.0	3.40	3.71	0.31	3.38	2.3
3	11:26	11:36	10.0	3.71	4.02	0.31	2.73	2.9
4	11:36	11:46	10.0	3.30	3.56	0.26	3.64	1.8
5	11:46	11:56	10.0	3.56	3.87	0.31	3.04	2.6
6	11:56	12:06	10.0	3.36	3.55	0.19	3.58	1.3
7	12:06	12:16	10.0	2.69	3.06	0.37	4.80	1.9
8	12:16	12:26	10.0	3.06	3.45	0.39	4.00	2.4
9								
10								
11								
12								

Calculated Infiltration Rate	**1.9**
Minimum Reduction Factor	4
Feasibility Infiltration Rate	**0.5**

Sketch:

Notes:

Based on Guidelines from: LA County dated 06/2017
Spreadsheet Revised on: 11/29/2017

LGC Geotechnical, Inc.

Infiltration Test Data Sheet

LGC Geotechnical, Inc
131 Calle Iglesia Suite A, San Clemente, CA 92672 tel. (949) 369-6141

Project Name: Evergreen
Project Number: 18176-01
Date: 10/23/2018
Location: I-2

Test hole dimensions (if circular)	
Boring Depth (feet)*:	10
Boring Diameter (inches):	8
Pipe Diameter (inches):	2

*measured at time of test

Test pit dimensions (if rectangular)	
Pit Depth (feet):	
Pit Length (feet):	
Pit Breadth (feet):	

Minimum Pre-Soak Head (D_o):
(What the sounder tape should read)

Boring Depth - 1 ft = 9

The value on the sounder tape should be slightly **Greater** than this value during testing

Pre-Soak /Pre-Test

No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval (min)	Initial Depth to Water (feet)	Final Depth to Water (feet)	Total Change in Water Level (feet)	Comments
PS-1	15:32	16:32	60.0	5.30	5.62	0.32	10/22/2018
Pre-Test	10:32	10:42	10.0	6.88	6.93	0.05	
Pre-Test	10:32	11:02	30.0	6.88	7.02	0.14	

Main Test Data

Trial No.	Start Time (24:HR)	Stop Time (24:HR)	Time Interval, Δt (min)	Initial Depth to Water, D_o (feet)	Final Depth to Water, D_f (feet)	Change in Water Level, ΔD (feet)	Surface Area of Test Section (feet ^2)	Raw Percolation Rate (in/hr)
1	11:02	11:32	30.0	6.67	7.11	0.44	7.32	0.5
2	11:32	12:02	30.0	7.11	7.48	0.37	7.32	0.4
3	12:02	12:32	30.0	7.48	7.74	0.26	7.32	0.3
4	12:32	13:02	30.0	7.74	7.98	0.24	7.32	0.3
5	13:02	13:32	30.0	7.98	8.18	0.20	7.32	0.2
6	13:38	14:08	30.0	6.14	6.47	0.33	7.32	0.4
7	14:08	14:38	30.0	6.47	6.76	0.29	7.32	0.3
8	14:38	15:08	30.0	6.76	7.14	0.38	7.32	0.4
9								
10								
11								
12								

Calculated Infiltration Rate	**0.4**
Minimum Reduction Factor	4
Feasibility Infiltration Rate	**0.1**

Sketch:

Notes:

Based on Guidelines from: LA County dated 06/2017
Spreadsheet Revised on: 11/29/2017

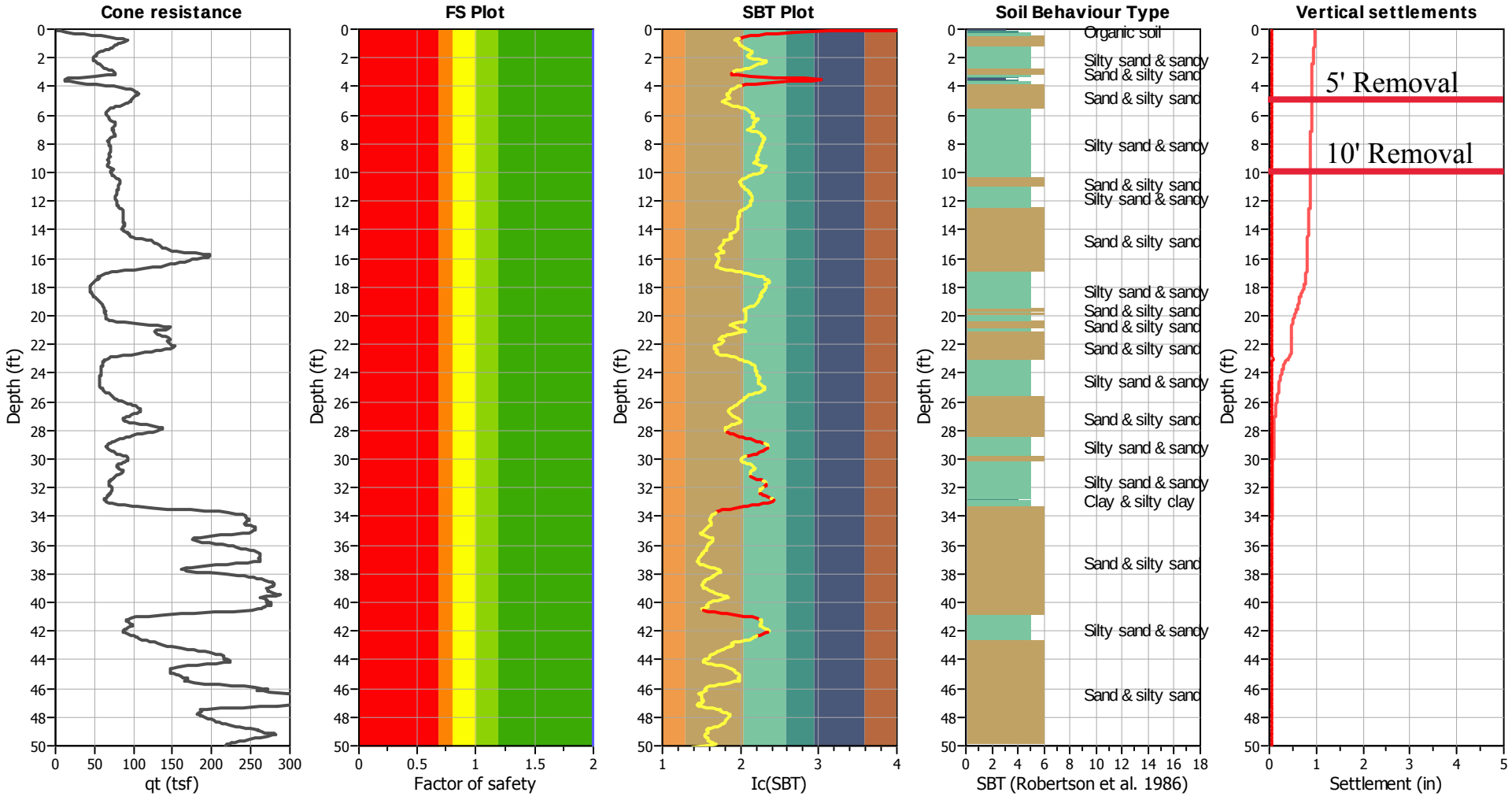
LGC Geotechnical, Inc.

Appendix E
Seismic Settlement Calculations

LGC Geotechnical, Inc.
Geotechnical Engineers

Project: Evergreen
Location: Monrovia, CA

CPT: CPT-1
Total depth: 50.40 ft

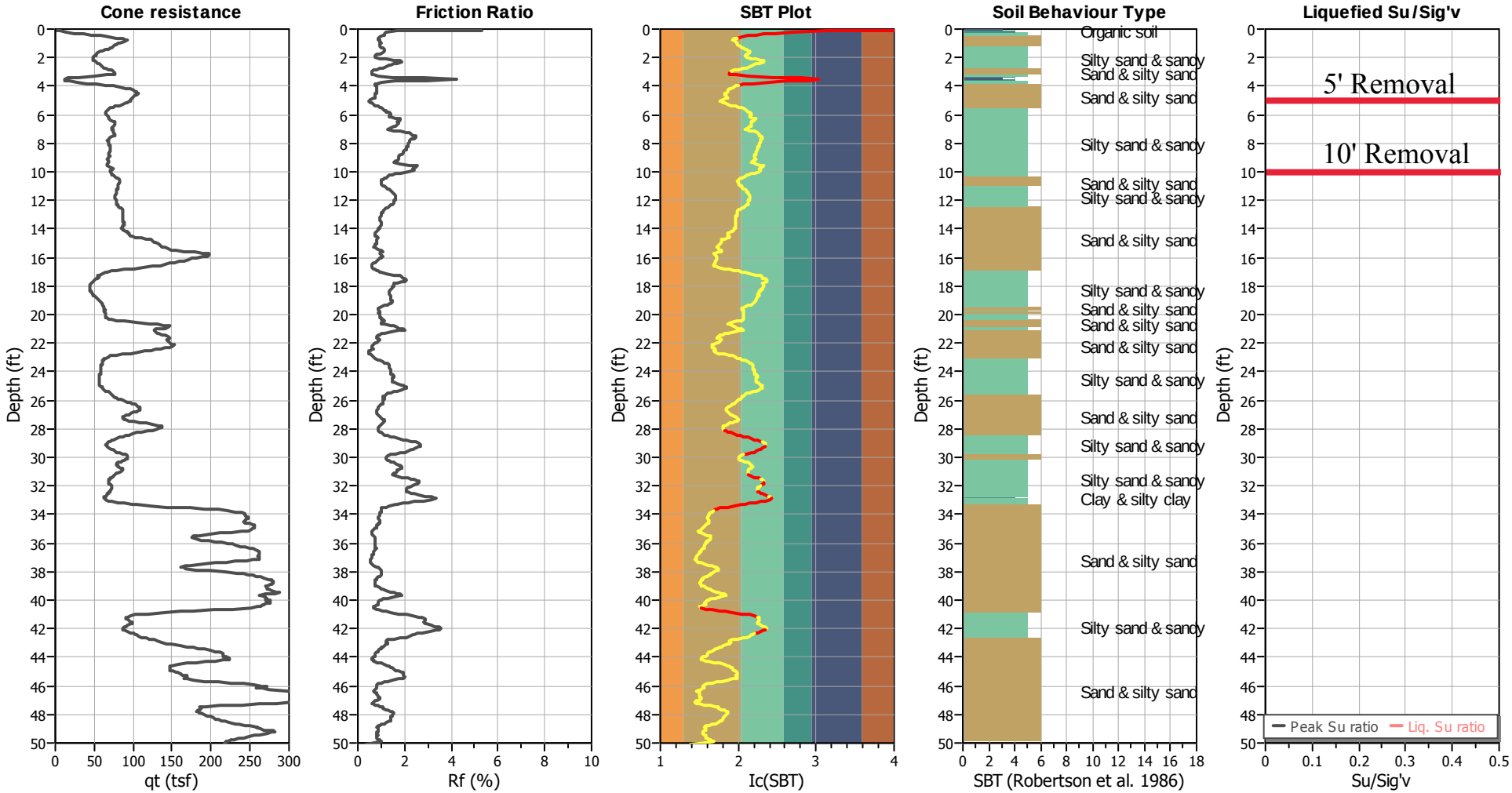


Analysis method:	NCEER (1998)	G.W.T. (in-situ):	150.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	150.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.70	Ic cut-off value:	2.40	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.81	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

LGC Geotechnical, Inc.
Geotechnical Engineers

Project: Evergreen
Location: Monrovia, CA

CPT: CPT-1
Total depth: 50.40 ft

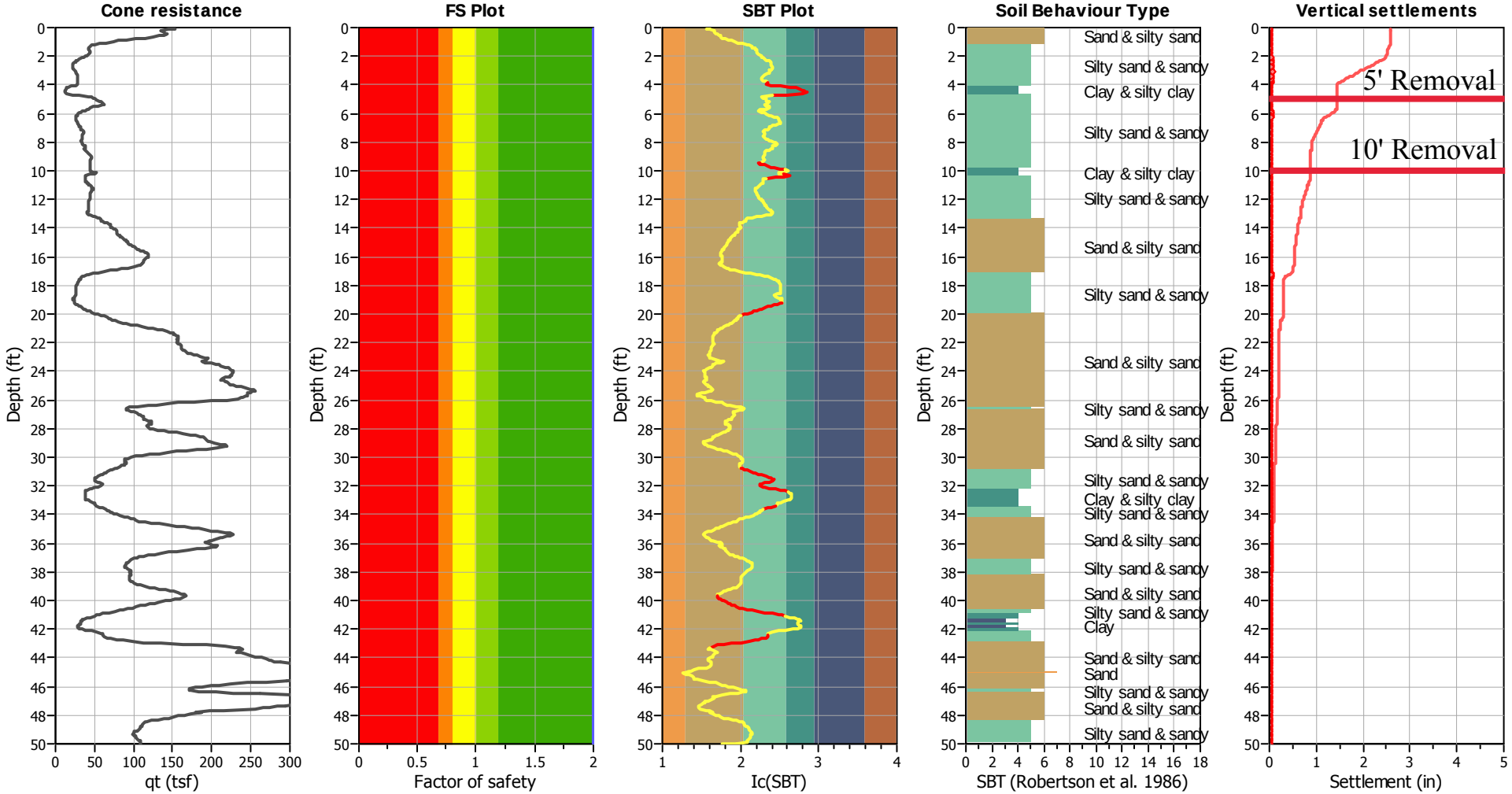


Analysis method:	NCEER (1998)	G.W.T. (in-situ):	150.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	150.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.70	Ic cut-off value:	2.40	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.81	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

LGC Geotechnical, Inc.
Geotechnical Engineers

Project: Evergreen
Location: Monrovia, CA

CPT: CPT-2
Total depth: 50.34 ft

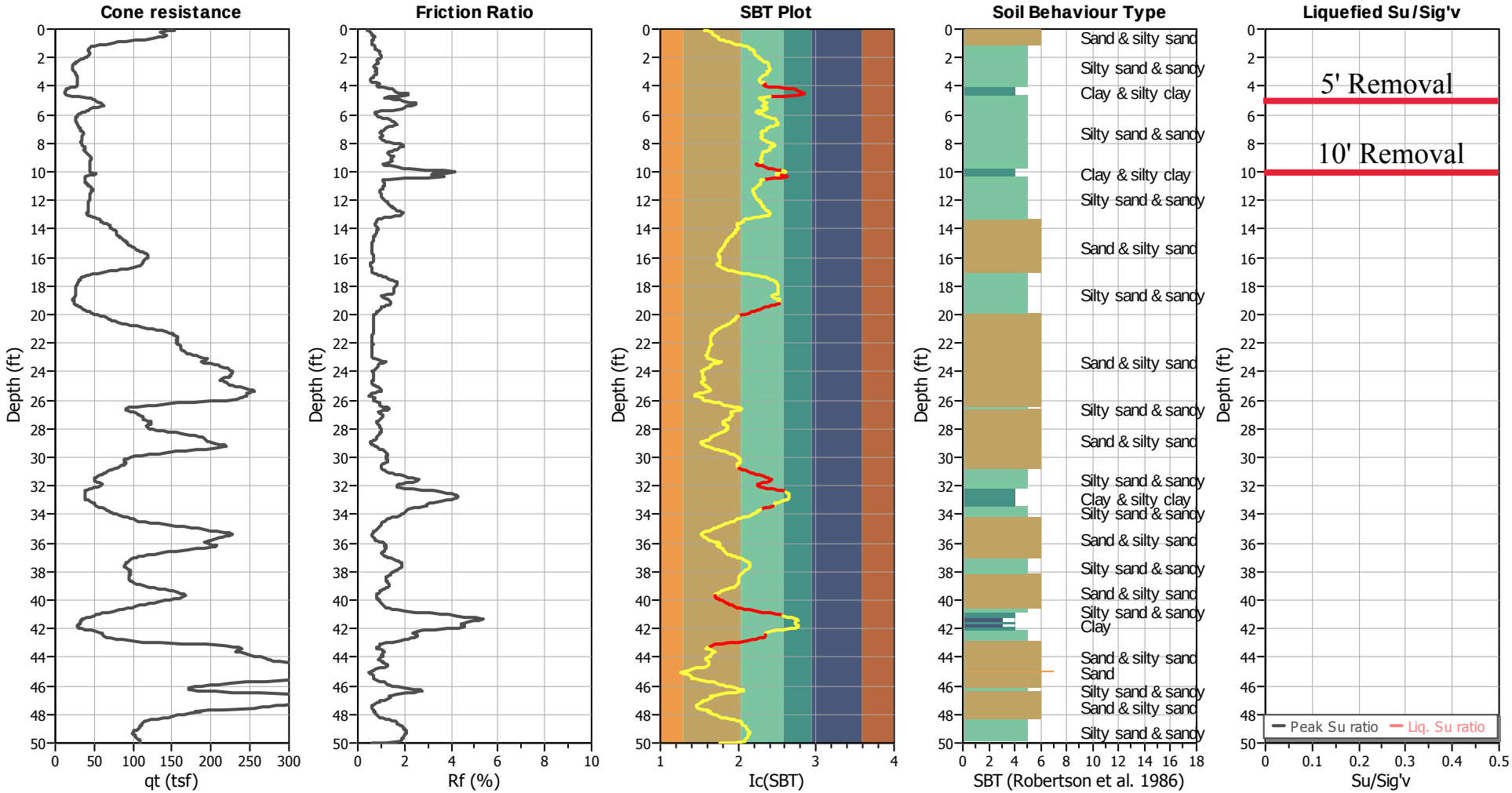


Analysis method:	NCEER (1998)	G.W.T. (in-situ):	150.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	150.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.70	Ic cut-off value:	2.40	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.81	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

LGC Geotechnical, Inc.
Geotechnical Engineers

Project: Evergreen
Location: Monrovia, CA

CPT: CPT-2
Total depth: 50.34 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	150.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	150.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	7.70	Ic cut-off value:	2.40	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.81	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

Appendix F
General Earthwork and Grading Specifications

General Earthwork and Grading Specifications for Rough Grading

1.0 General

1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of “equipment” of work and the estimated quantities of daily earthwork

contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the
Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until soils are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Over-excavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of the geotechnical consultant. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.5 Compaction Testing

Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than
5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

7.1 The Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

7.2 All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over

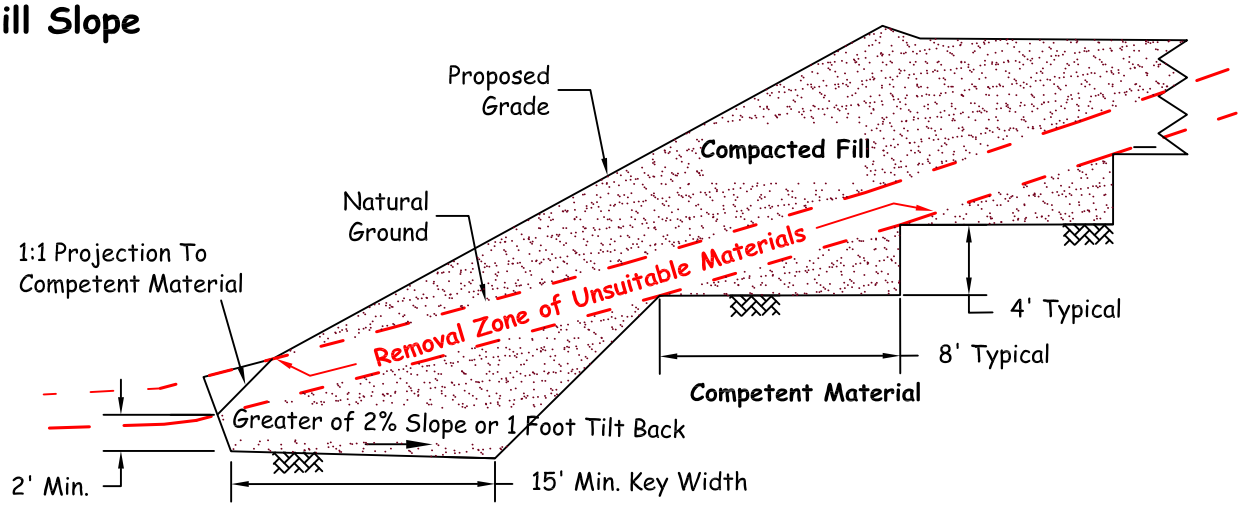
the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

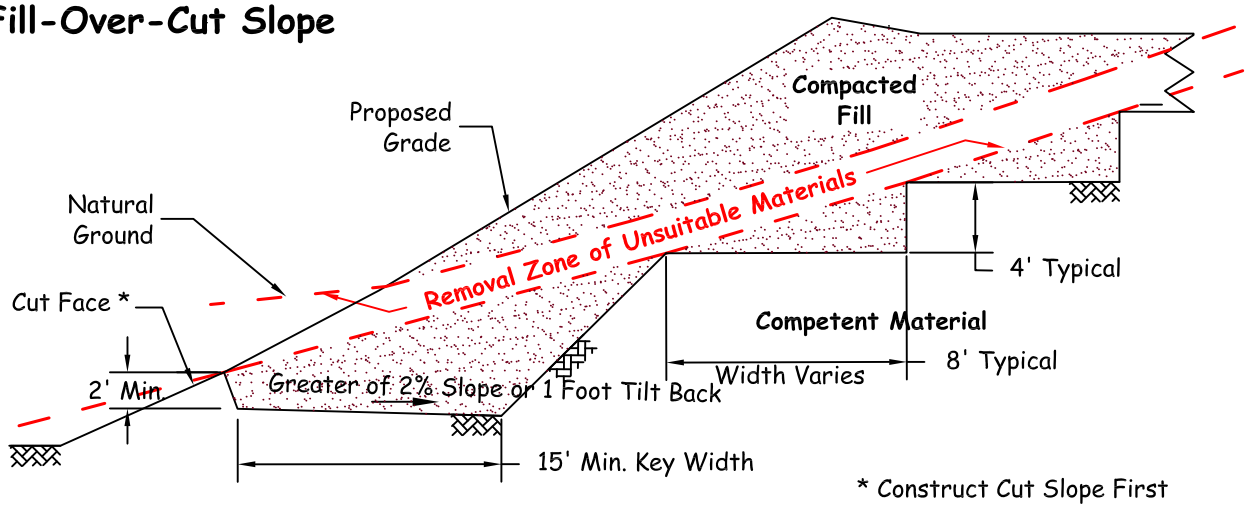
7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.

7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Fill Slope

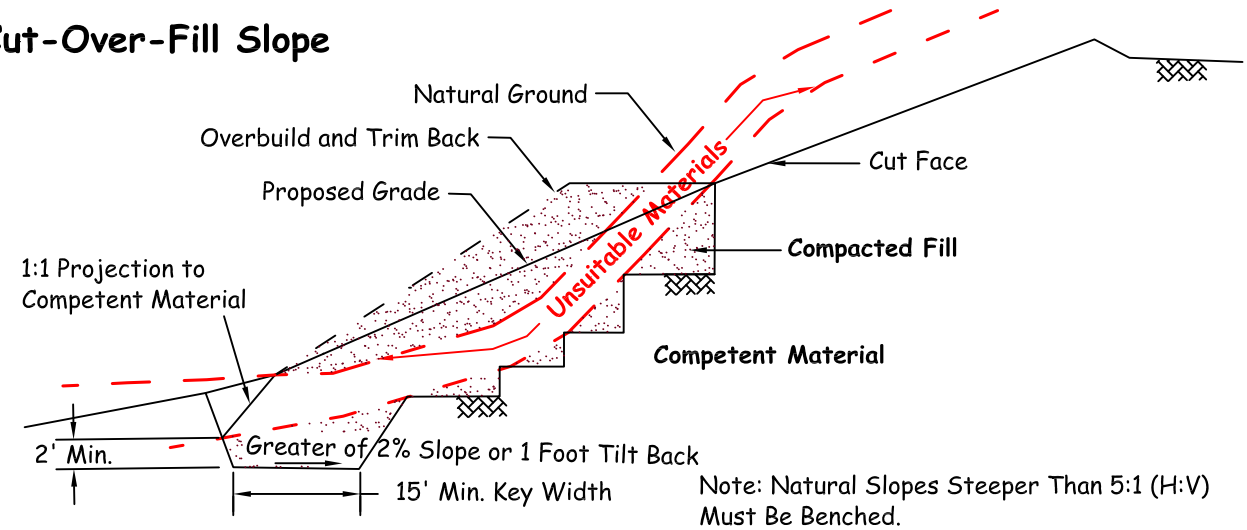


Fill-Over-Cut Slope



* Construct Cut Slope First

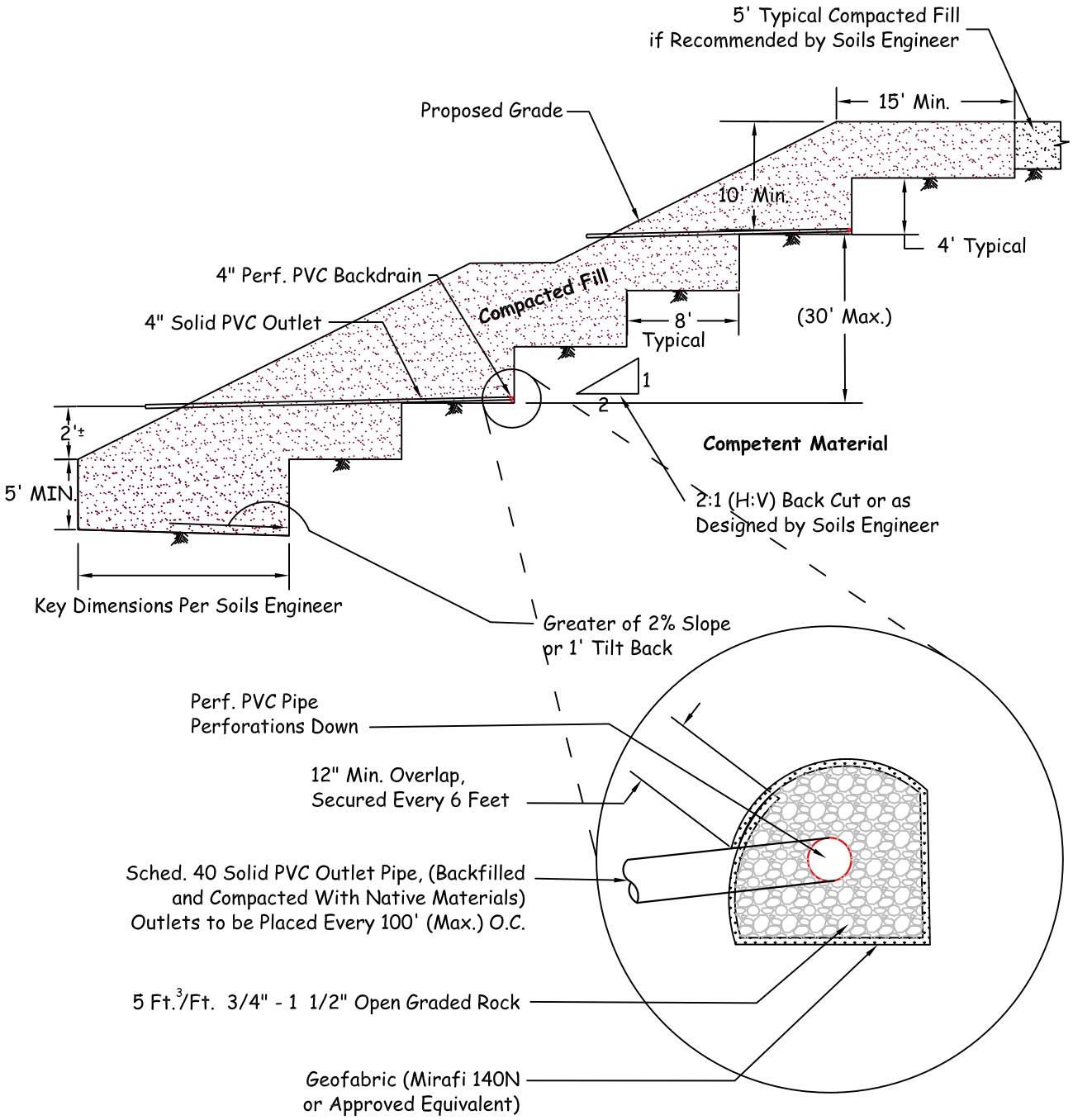
Cut-Over-Fill Slope



Note: Natural Slopes Steeper Than 5:1 (H:V) Must Be Benched.

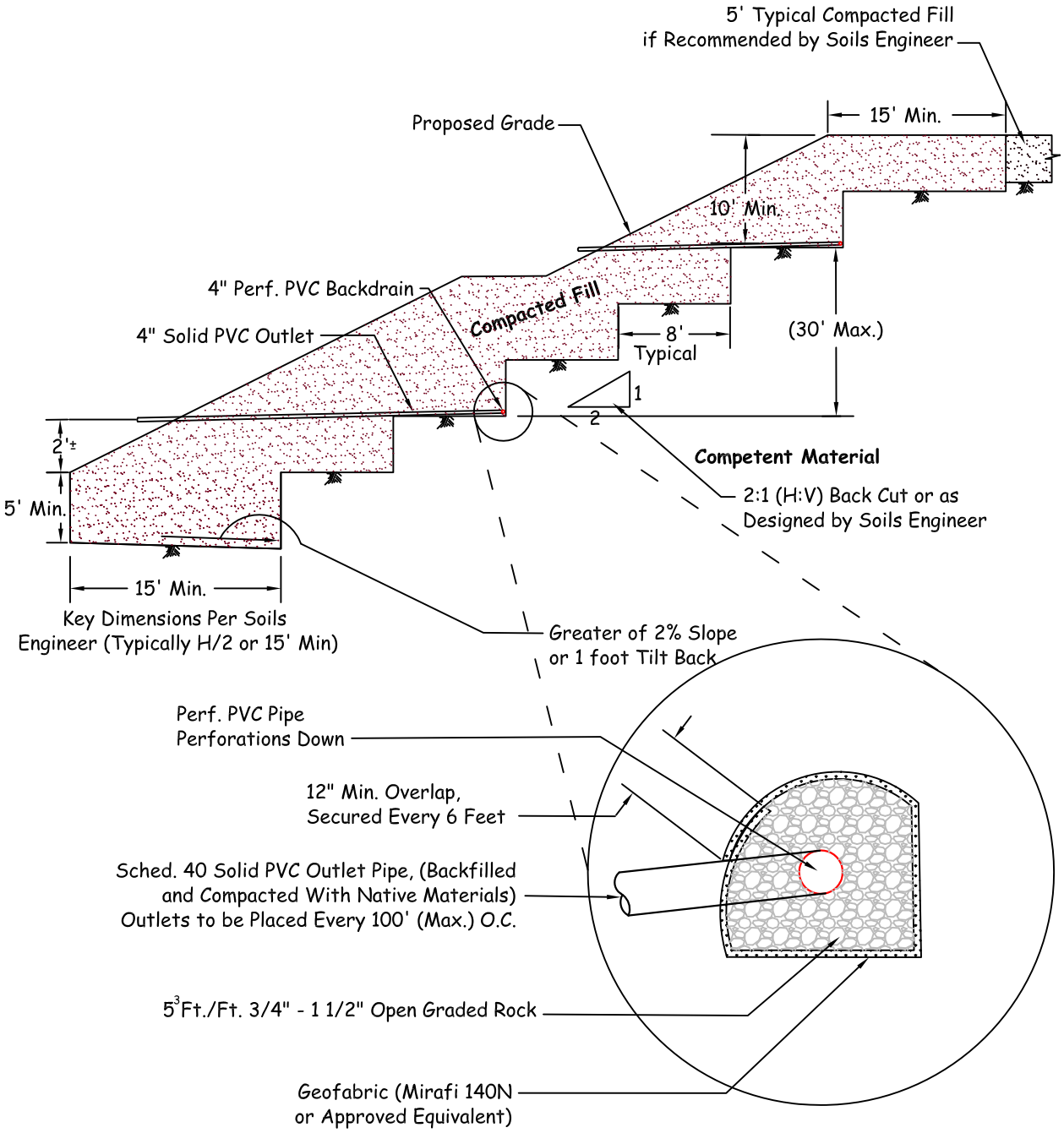
LGC Geotechnical, Inc.

KEYING AND BENCHING



LGC Geotechnical, Inc.

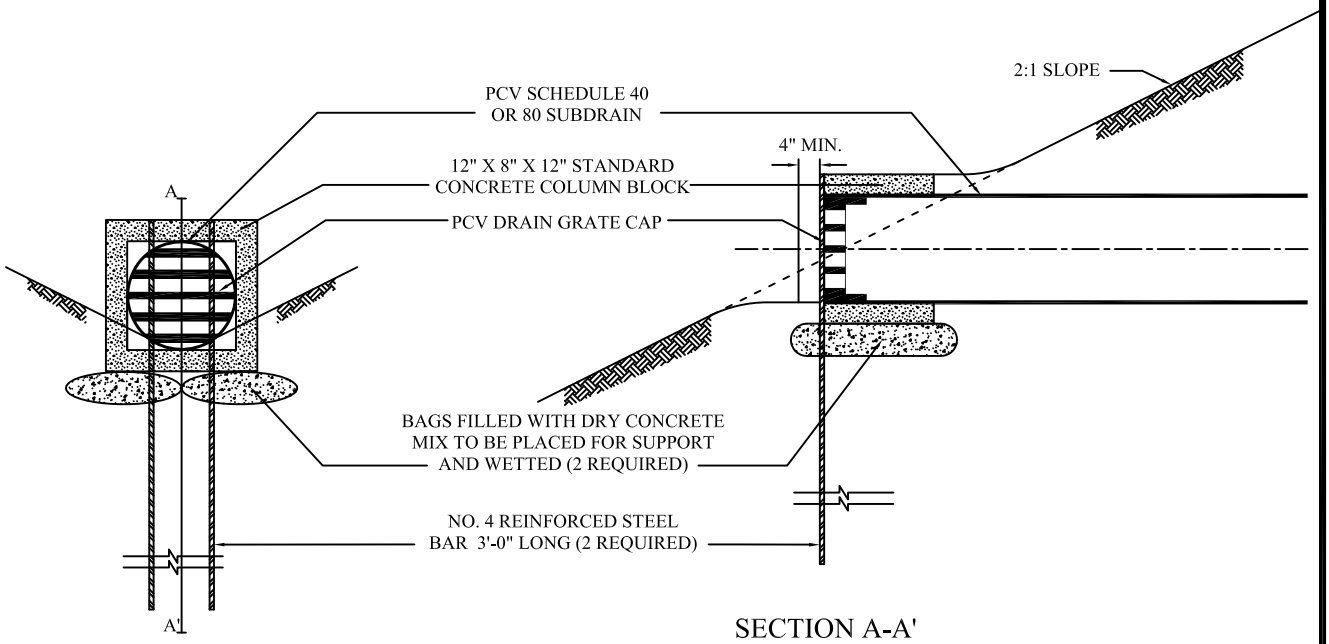
TYPICAL BUTTRESS DETAIL



LGC Geotechnical, Inc.

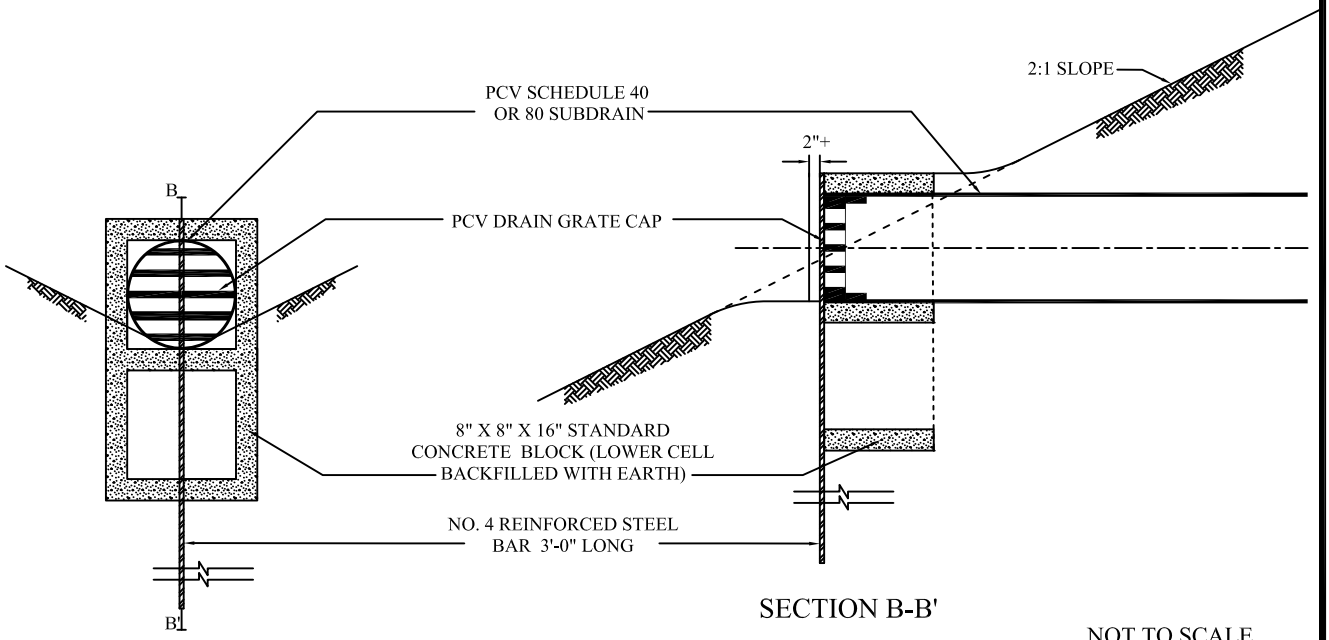
TYPICAL STABILIZATION FILL DETAIL

SUBDRAIN OUTLET MARKER -6" & 8" PIPE



SECTION A-A'

SUBDRAIN OUTLET MARKER -4" PIPE



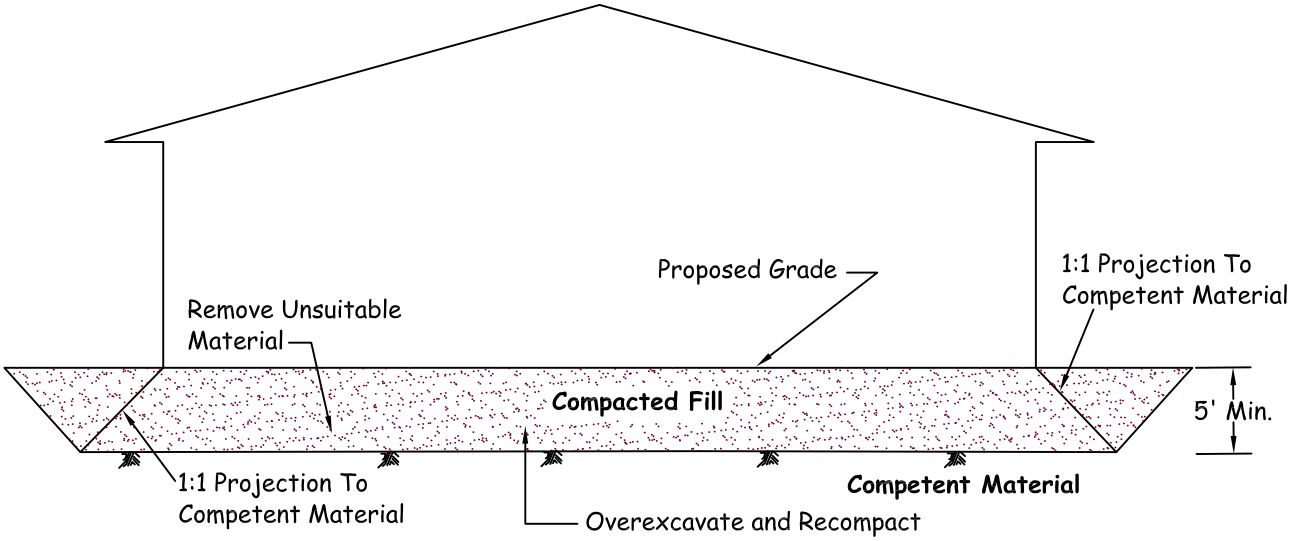
SECTION B-B'

NOT TO SCALE

LGC Geotechnical, Inc.

SUBDRAIN OUTLET MARKER DETAIL

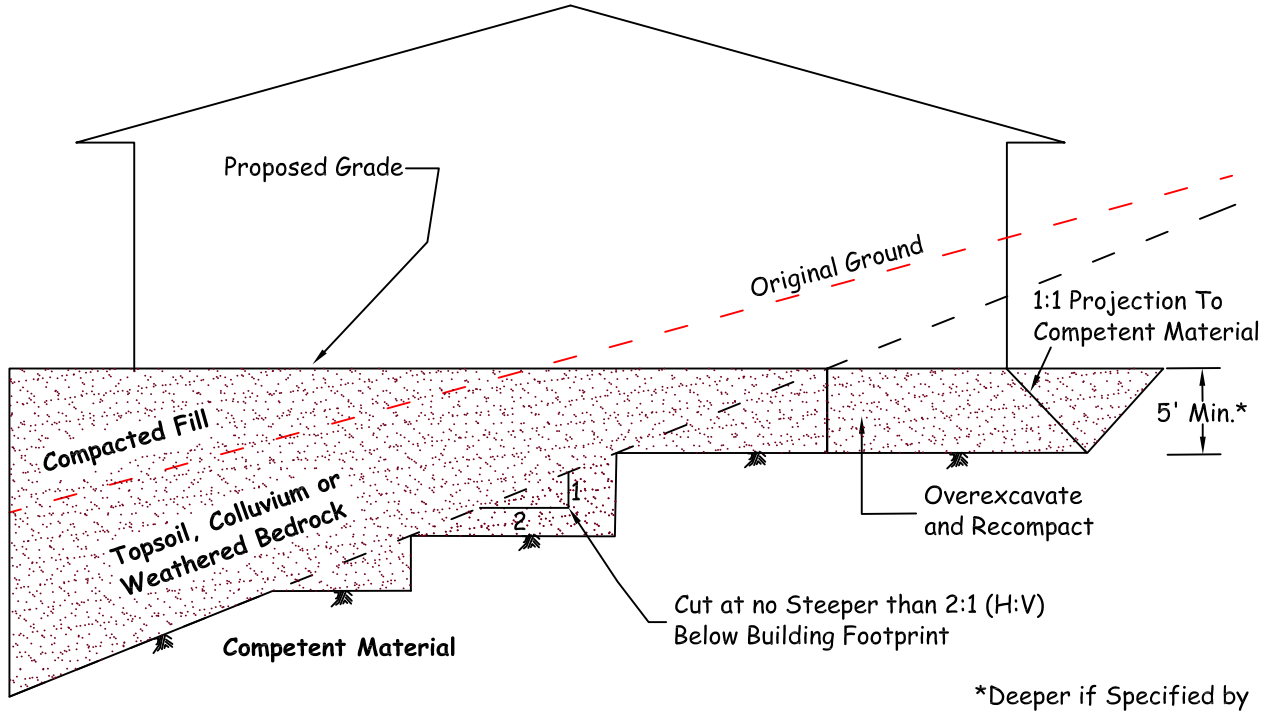
Cut Lot
(Exposing Unsuitable Soils at Design Grade)



Note 1: Removal Bottom Should be Graded With Minimum 2% Fall Towards Street or Other Suitable Area (as Determined by Soils Engineer) to Avoid Ponding Below Building

Note 2: Where Design Cut Lots are Excavated Entirely Into Competent Material, Overexcavation May Still be Required for Hard-Rock Conditions or for Materials With Variable Expansion Characteristics.

Cut/Fill Transition Lot



*Deeper if Specified by Soils Engineer

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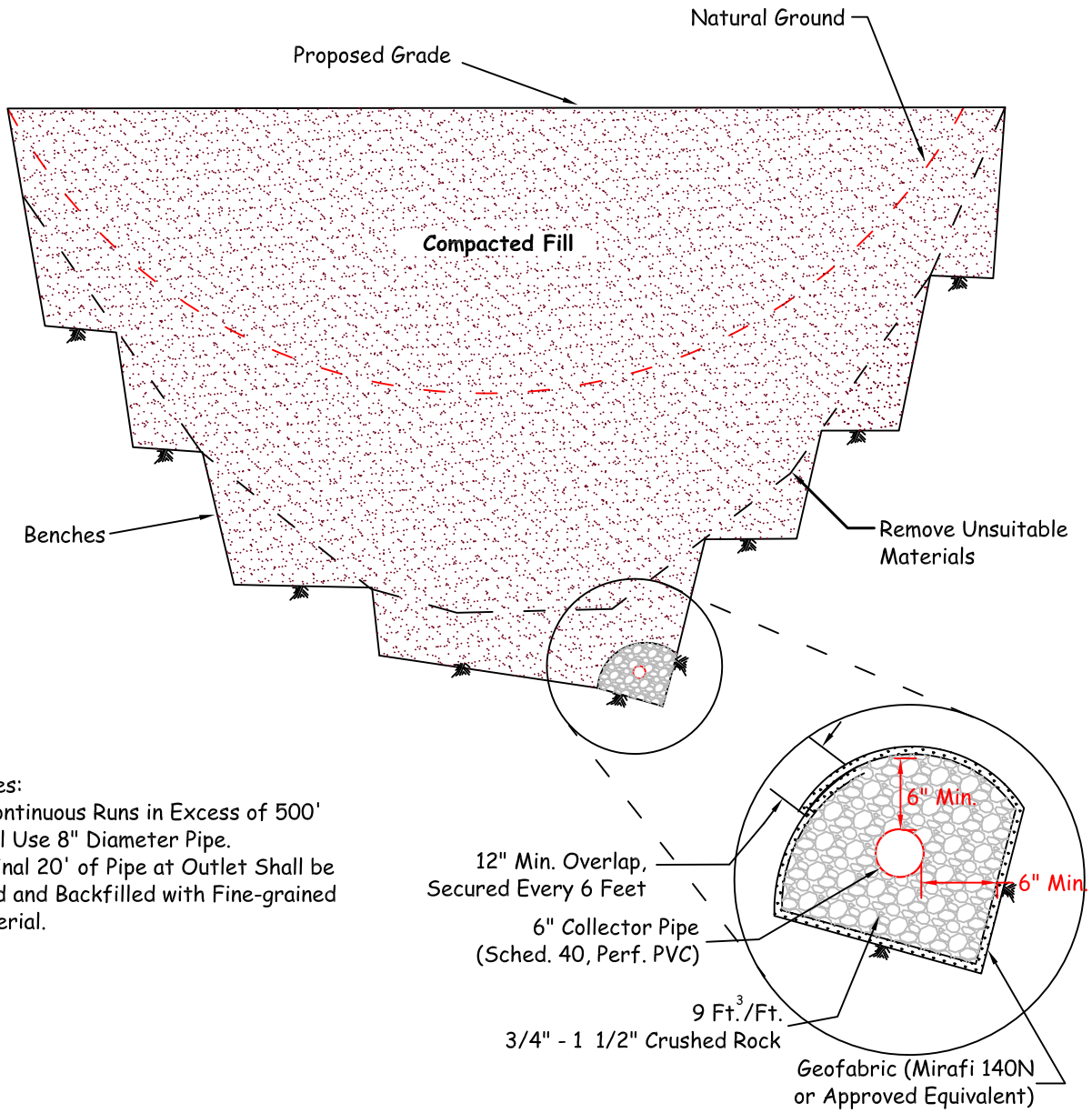
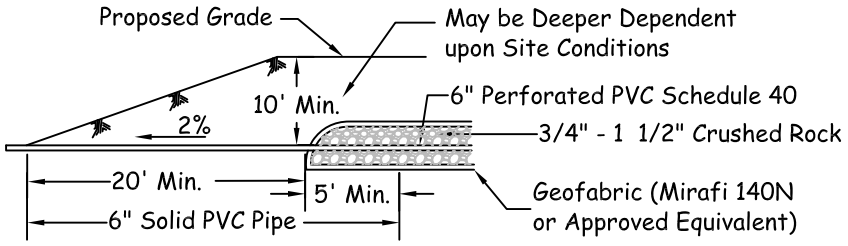
CUT AND TRANSITION LOT OVEREXCAVATION DETAIL



Notes:
1) Continuous Runs in Excess of 500' Shall Use 8" Diameter Pipe.
2) Final 20' of Pipe at Outlet Shall be Solid and Backfilled with Fine-grained Material.

Proposed Outlet Detail



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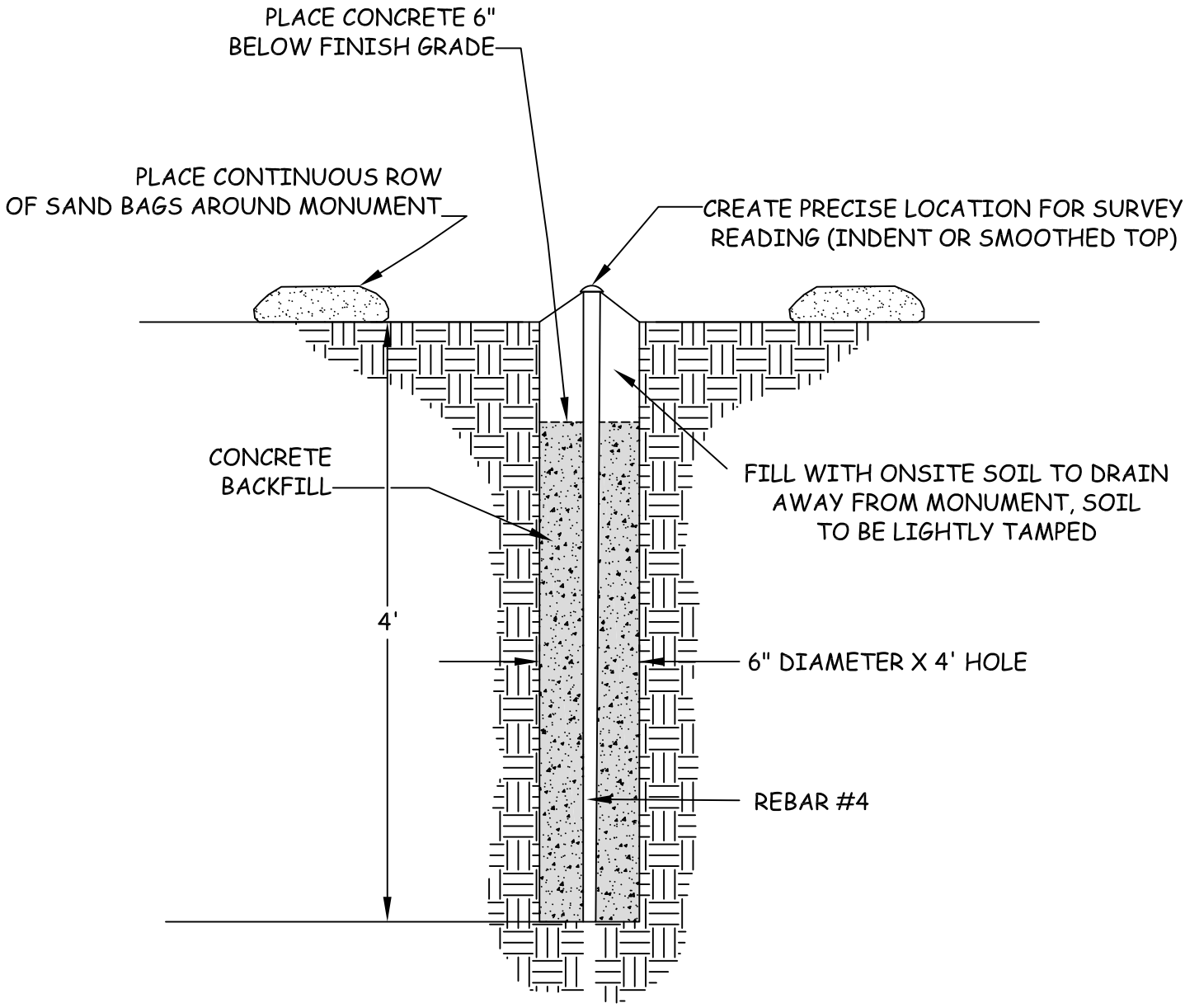
CANYON SUBDRAINS



NO CONSTRUCTION EQUIPMENT WITHIN 25 FEET
OF ANY INSTALLED SETTLEMENT MONUMENTS

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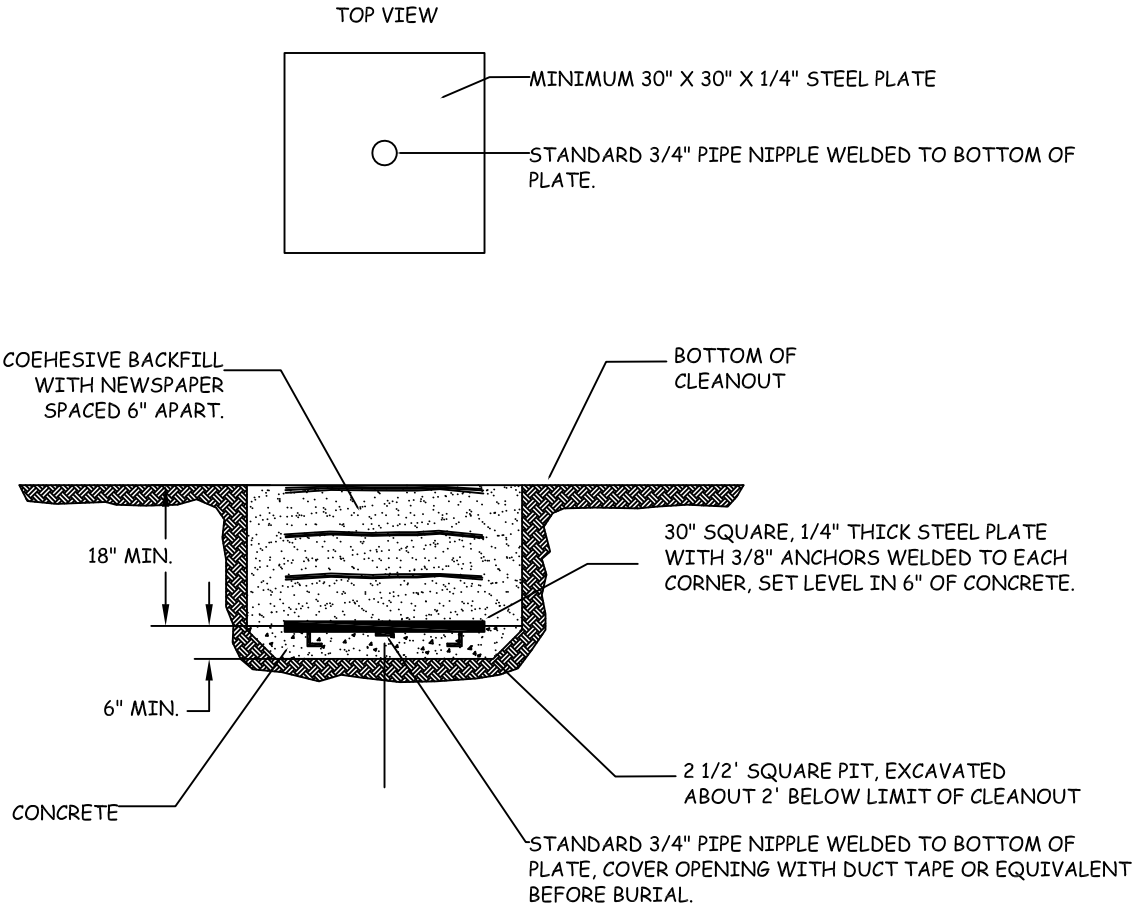
TYPICAL SURFACE SETTLEMENT MONUMENT



1. SURVEY FOR HORIZONTAL AND VERTICAL LOCATION TO NEAREST .01 INCH PRIOR TO BACKFILL USING KNOW LOCATIONS THAT WILL REMAIN INTACT DURING THE DURATION OF THE MONITORING PROGRAM. KNOW POINTS EXPLICITELY NOT ALLOWED ARE THOSE LOCATED ON FILL OR THAT WILL BE DESTROYED DURING GRADING.
2. IN THE EVENT OF DAMAGE TO SETTLEMENT PLATE DURING GRADING, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE GEOTECHNICAL ENGINEER AND SHALL BE RESPONSIBLE FOR RESTORING THE SETTLEMENT PLATES TO WORKING ORDER.
3. DRILL TO RECOVER AND ATTACH RISER PIPE.

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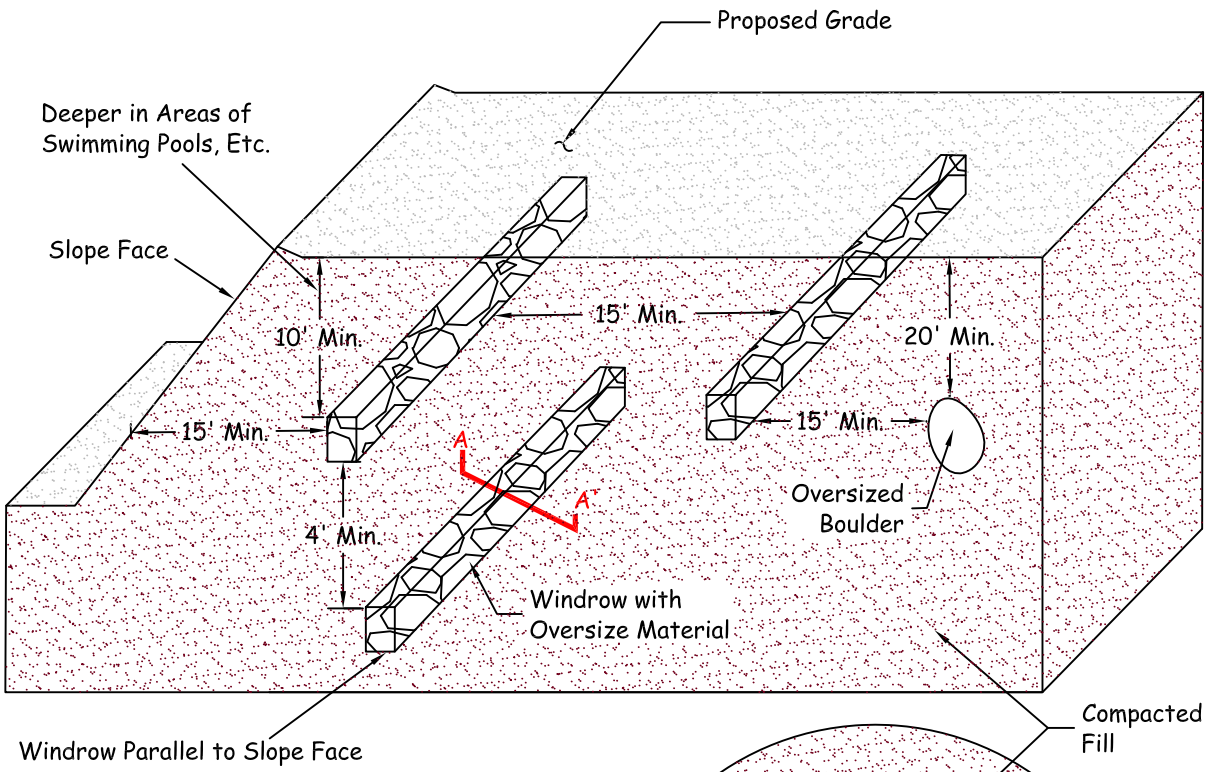
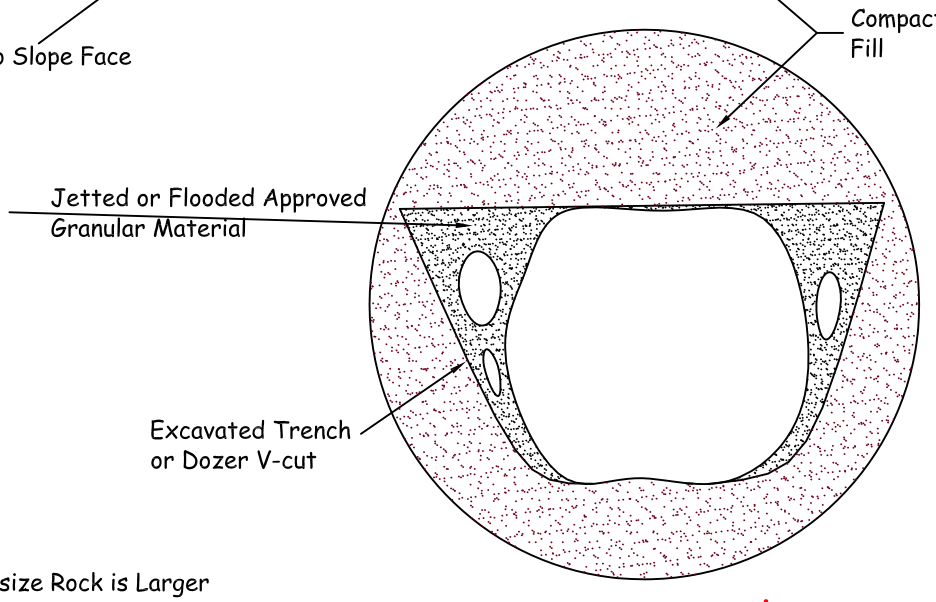
TYPICAL SETTLEMENT PLATE AND RISER





Note: Oversize Rock is Larger
than 8" in Maximum Dimension.

Section A-A'

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OVERSIZE ROCK DISPOSAL DETAIL

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