SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

ITEM: 3.34
(ID # 22425)
MEETING DATE:
Tuesday, August 29, 2023

FROM : HOUSING AND WORKFORCE SOLUTIONS:

SUBJECT: HOUSING & WORKFORCE SOLUTIONS (HWS): Adoption of Environmental Assessment Report and Finding of No Significant Impact (FONSI) for the Eucalyptus Avenue Affordable Housing Project Pursuant to the National Environment Policy Act (NEPA); and Approval of Requests for Release of Funds from U.S. Department of Housing and Urban Development (HUD); District 5. [$464,716 - 100% HOME Investment Partnerships Act Funds]

RECOMMENDED MOTION: That the Board of Supervisors:

1. Find, in its independent judgment and analysis as a Responsible Agency under National Environmental Policy Act (NEPA) in issuing certain limited approvals, after review and consideration the information in the previously adopted Environmental Initial Study/Mitigated Negative Declaration (MND) and Finding of No Significant Impact (FONSI) and associated documents by the City of Moreno Valley, as lead agency, on February 15, 2023 for the Eucalyptus Avenue Project (Proposed Project), that as to those potential environmental impacts within the County's powers and authorities as responsible agency for the request for release of Home Investment Partnerships Act (HOME) funding for the Proposed Project and certification associated therewith, any potentially significant environmental effects have been adequately analyzed and nothing further is required under NEPA;

Continued on Page 2

ACTION:Policy

Heidi Marshall, Director 7/26/2023

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Jeffries, seconded by Supervisor Perez and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes:	Jeffries, Spiegel, Perez, Washington, and Gutierrez
Nays:	None
Absent:	None
Date:	August 29, 2023
xc:	HWS,

Kimberly A. Rector
Clerk of the Board
By: _____
Deputy

RECOMMENDED MOTION: That the Board of Supervisors:

2. Adopt the Environmental Assessment and Finding of No Significant Impact (EA) for the Proposed Project approved by the City of Moreno Valley on February 15, 2023 (Item A.1);

3. Find that the original findings in the EA are still valid and there is no need for re-evaluation because a) there are no substantial changes in nature, magnitude or extent of the Project, b) there are no new circumstances or environmental conditions which may affect the Project or have a bearing on its impact, and c) the recipient has not proposed the selection of an alternative not in the original findings;

4. Adopt the attached County of Riverside's Environmental Assessment (County EA) and Finding of No Significant Impact (FONSI) for the Project based on the findings incorporated therein and conclude that the Project is not an action which may affect the quality of the environment;

5. Approve the attached Request for Release of Funds (RROF) for Home Investment Partnerships Act funds in the amount of $464,716;

6. Authorize the Chair of the Board of Supervisors to execute the attached EA on behalf of the County;

7. Authorize the Chair of the Board of Supervisors to execute the RROF to be filed with the United States Department of Housing and Urban Development (HUD); and

8. Authorize the Director of HWS, or designee, to take all necessary steps to implement the RROF, County EA and FONSI, including, but not limited to, signing subsequent necessary and relevant documents subject to approval as to form by County Counsel.

FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost
COST	$464,716	$ 0	$464,716	$ 0
NET COUNTY COST	$ 0	$ 0	$ 0	$ 0
SOURCE OF FUNDS: 100% HOME Investment Partnerships Act Funds			**Budget Adjustment:** No **For Fiscal Year:** 23/24	

C.E.O. RECOMMENDATION: Approve

BACKGROUND:

Summary

Mary Erickson Community Housing (Developer), a California nonprofit public benefit corporation and an affordable housing developer and certified Community Housing Development Organization (CHDO), is applying to the County of Riverside (County) for a commitment of $464,716 in HOME Investment Partnerships Act (HOME) funds for the development of Eucalyptus Avenue for sale to qualified low-income families (Proposed Project). The Proposed Project will consist of seven (7) for-sale residential units; consisting of four (4) three-bedroom, two-bath units and three (3) four-bedroom, two bath units, ranging in size from 1,290 sq. ft. to 1,700 sq. ft. plus attached two car garage, and included front and backyards located on approximately 1.40 acres of land located on the North side of Eucalyptus Avenue between Heacock Street and Indian Street, in the City of Moreno Valley, Riverside County, California, identified as Assessor Parcel Numbers 481-270-058 (Property).

The applicant proposes to set aside seven (7) HOME-assisted units for sale to 80% AMI First Time Homebuyers with a preference for U.S. Veterans in the City of Moreno Valley, California. The purpose of the Proposed Project is to provide affordable for-sale residences to income qualifying buyers.

In addition to the $464,716 derived from County HOME funds, other financing sources for the Proposed Project include $887,884 in City of Moreno Valley HOME Debt to Homebuyer funds, $508,134 in City of Moreno Valley HOME Developer Subsidy, $1,161,659 New 1st Mortgage Debt, $31,150 in Buyer Downpayment, and $700,000 in Down Payment Assistance Private Debt. The total cost of development, during the permanent financing period, is approximately $3,753,543.

NEPA Review

The environmental effects of activities carried out with HOME funds must be assessed in accordance with National Environmental Policy Act (NEPA) and the related authorities listed in the U.S. Department of Housing and Urban Development (HUD) implementing regulations at 24 CFR Parts 50 and 58, for responsible entities which must assume responsibility for environmental review, decision making, and action that normally apply to HUD. The County of Riverside, by and through its Housing and Workforce Solutions Department (HWS), is the responsible entity (RE) for purposes of the subject NEPA review.

On February 15, 2023 (Item A.1), the City or Moreno Valley, as Responsible Entity (RE) for the NEPA process and the procedures as set forth in 24 CFR Sections 58.5 and 58.6, adopted and approved the NEPA and determined a Finding of No Significant Impact (FONSI) on the environment (Original EA). HWS reviewed the Original EA for the Proposed Project and determined the original findings are still valid and there is no need for re-evaluation pursuant to 24 CFR Section 58.47. Subsequently, the HWS has prepared an EA for the Proposed Project (EA) that incorporates the original findings made in the Original EA.

HUD also requires that the County complete and execute the attached Requests for Release of Funds and Certification (RROF) when requesting the release of HOME funds that are subject to the HUD environmental review process.

Public Notice of the Finding of No Significant Impact (FONSI) and Requests for Release of Funds was published on August 9, 2023, pursuant to 24 Code of Federal Regulations Section 58.43, and is attached hereto.

Staff recommends that the Board approve and execute the attached Environmental Assessment, Environmental Assessment Determinations and Compliance Findings for HUD-Assisted Projects 24 CFR Part 58, and Requests for Release of Funds.

Impact on Residents and Businesses

Eucalyptus Avenue project will have a positive impact on community members and businesses in the County of Riverside as it provides affordable for-sale residences to income-qualifying buyers.

SUPPLEMENTAL:

Additional Fiscal Information

No impact upon the County's General Fund; the County's contribution will be funded with HOME Investment Partnerships Act Funds.

Attachments:

- County of Riverside Environmental Assessment/FONSI
- Public Notice
- Request for Release of Funds – HOME
- City of Moreno Valley Environmental Assessment
- City of Moreno Valley Initial Study/Mitigated Negative Declaration

Heydee Koury
Heydee Koury, Sr Accountant - Auditor 7/27/2023

Brianna Lontajo
Brianna Lontajo, Principal Management Analyst 8/22/2023

Kristine Bell-Valdez
Kristine Bell-Valdez, Supervising Deputy County Counsel 8/10/2023

Request for Release of Funds and Certification

U.S. Department of Housing and Urban Development
Office of Community Planning and Development

OMB No. 2506-0087
(exp. 03/31/2020)

This form is to be used by Responsible Entities and Recipients (as defined in 24 CFR 58.2) when requesting the release of funds, and requesting the authority to use such funds, for HUD programs identified by statutes that provide for the assumption of the environmental review responsibility by units of general local government and States. Public reporting burden for this collection of information is estimated to average 36 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless that collection displays a valid OMB control number.

Part 1. Program Description and Request for Release of Funds (to be completed by Responsible Entity)

1. Program Title(s)	2. HUD/State Identification Number	3. Recipient Identification Number (optional)
Home Investment Partnerships Act Funds (HOME)	#069065	

4. OMB Catalog Number(s)	5. Name and address of responsible entity
14.239	County of Riverside, Board of Supervisors c/o Riverside County Housing and Workforce Solutions 3403 Tenth Street, Suite #300 Riverside, CA 92501
6. For information about this request, contact (name & phone number) Diana Acosta, 951.955.0856	
8. HUD or State Agency and office unit to receive request United States Department of Housing and Urban Development Community Planning and Development 300 N. Los Angeles Street, Suite 4054 Los Angeles, CA 90012	7. Name and address of recipient (if different than responsible entity) Same as Responsible Entity

The recipient(s) of assistance under the program(s) listed above requests the release of funds and removal of environmental grant conditions governing the use of the assistance for the following

9. Program Activity(ies)/Project Name(s)	10. Location (Street address, city, county, State)
Home Investment Partnerships Act Funds	North side of Eucalyptus Avenue between Heacock Street and Indian Street, in the City of Moreno Valley, Riverside County, California, identified as Assessor Parcel Numbers 481-270-058

11. Program Activity/Project Description

The Project activity proposes the use of $464,716 in Home Investment Partnerships Act funds by Mary Erickson Community Housing (MECH), a California nonprofit public benefit corporation and an affordable housing developer and certified Community Housing Development Organization (CHDO), to construct seven (7) for-sale residential units; consisting of four (4) three-bedroom, two-bath units and three (3) four-bedroom, two bath units, ranging in size from 1,290 sq. ft. to 1,700 sq. ft. plus attached two car garage, and included front and backyards located on approximately 1.40 acres of land located at on the North side of Eucalyptus Avenue between Heacock Street and Indian Street, in the City of Moreno Valley, Riverside County, California, identified as Assessor Parcel Numbers 481-270-058 (Property).

The applicant proposes to set aside seven HOME-assisted units for Sale to 80% AMI First Time Homebuyers with a preference for US Veterans in the City of Moreno Valley, California. The purpose of the Proposed Project is to provide affordable for-sale residences to income qualifying buyers.

In addition to the $464,716 derived from County HOME funds, other financing sources for the Proposed Project include a $887,884 in City of Moreno Valley HOME Debt to Homebuyer, $508,134 in City of Moreno Valley HOME Developer Subsidy, $1,161,659 New 1st Mortgage Debt, $31,150 in Buyer Downpayment, and $700,000 in Down Payment Assistance Private Debt. The total cost of development, during the permanent financing period, is approximately $3,753,543.

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Part 2. Environmental Certification (to be completed by responsible entity)

With reference to the above Program Activity(ies)/Project(s), I, the undersigned officer of the responsible entity, certify that:

1. The responsible entity has fully carried out its responsibilities for environmental review, decision-making and action pertaining to the project(s) named above.
2. The responsible entity has assumed responsibility for and complied with and will continue to comply with, the National Environmental Policy Act of 1969, as amended, and the environmental procedures, permit requirements and statutory obligations of the laws cited in 24 CFR 58.5; and also agrees to comply with the authorities in 24 CFR 58.6 and applicable State and local laws.
3. The responsible entity has assumed responsibility for and complied with and will continue to comply with Section 106 of the National Historic Preservation Act, and its implementing regulations 36 CFR 800, including consultation with the State Historic Preservation Officer, Indian tribes and Native Hawaiian organizations, and the public.
4. After considering the type and degree of environmental effects identified by the environmental review completed for the proposed project described in Part 1 of this request, I have found that the proposal did ☐ did not ☑ require the preparation and dissemination of an environmental impact statement.
5. The responsible entity has disseminated and/or published in the manner prescribed by 24 CFR 58.43 and 58.55 a notice to the public in accordance with 24 CFR 58.70 and as evidenced by the attached copy (copies) or evidence of posting and mailing procedure.
6. The dates for all statutory and regulatory time periods for review, comment or other action are in compliance with procedures and requirements of 24 CFR Part 58.
7. In accordance with 24 CFR 58.71(b), the responsible entity will advise the recipient (if different from the responsible entity) of any special environmental conditions that must be adhered to in carrying out the project.

As the duly designated certifying official of the responsible entity, I also certify that:

8. I am authorized to and do consent to assume the status of Federal official under the National Environmental Policy Act of 1969 and each provision of law designated in the 24 CFR 58.5 list of NEPA-related authorities insofar as the provisions of these laws apply to the HUD responsibilities for environmental review, decision-making and action that have been assumed by the responsible entity.
9. I am authorized to and do accept, on behalf of the recipient personally, the jurisdiction of the Federal courts for the enforcement of all these responsibilities, in my capacity as certifying officer of the responsible entity.

Signature of Certifying Officer of the Responsible Entity	Title of Certifying Officer
X	Chair, Riverside County Board of Supervisors
	Date signed: 8/29/23

Address of Certifying Officer

C/O Riverside County Housing and Workforce Solutions, 3403 Tenth Street, Suite #300, Riverside, CA 92501

ATTEST: KIMBERLY A. RECTOR, Clerk
By: DEPUTY

Part 3. To be completed when the Recipient is not the Responsible Entity

The recipient requests the release of funds for the programs and activities identified in Part 1 and agrees to abide by the special conditions, procedures and requirements of the environmental review and to advise the responsible entity of any proposed change in the scope of the project or any change in environmental conditions in accordance with 24 CFR 58.71(b).

Signature of Authorized Officer of the Recipient	Title of Authorized Officer
X	Date signed

Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31 U.S.C. 3729, 3802)

Previous editions are obsolete

form **HUD-7015.15** (1/99)

FORM APPROVED COUNTY COUNSEL
BY: PAULA S. SALCIDO 8/7/2023 DATE

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U.S. Department of Housing and Urban Development
Los Angeles Field Office
300 N. Los Angeles, Suite 4054
Los Angeles, CA 90012

Environmental Assessment

for HUD-funded Proposals

Recommended format per 24 CFR 58.36, revised March 2005
[Previously recommended EA formats are obsolete].

Project Identification: Eucalyptus Avenue Project

Preparer: Diana Acosta, Housing Specialist

Responsible Entity: County of Riverside

Month/Year: July 21, 2023

Environmental Assessment

Responsible Entity: [24 CFR 58.2(a)(7)]	County of Riverside
Certifying Officer: [24 CFR 58.2(a)(2)]	Chair, Riverside County Board of Supervisors
Project Name:	Eucalyptus Avenue Project
Project Location:	North side of Eucalyptus Avenue between Heacock Street and Indiana Street, CA 92553. The project site is located in the City of Moreno Valley. Identified as Assessor Parcel Number 481-270-058.
Estimated total project cost:	$3,753,543
Grant Recipient: [24 CFR 58.2(a)(5)]	Mary Erickson Community Housing
Recipient Address:	PO Box 775 San Clemente, CA. 92674
Project Representative:	Ayako Utsumi, Project Manager
Telephone Number:	Phone: (213) 300-3076 Email: autsumi@valonconsulting.com

Conditions for Approval: (List all mitigation measures adopted by the responsible entity to eliminate or minimize adverse environmental impacts. These conditions must be included in project contracts and other relevant documents as requirements). [24 CFR 58.40(d), 40 CFR 1505.2(c)]

An Environmental Assessment and Compliance Findings for the Related Laws ("EA") was completed and approved by the City of Moreno Valley on February 15, 2023. The County of Riverside ("RE") has reviewed the EA and found that the original findings are still valid and there is no need for re-evaluation pursuant to 24 CFR Section 58.47 as:

1) There are no substantial changes in nature, magnitude or extent of the project;
2) There are no new circumstances and environmental conditions which may affect the project or have a bearing on its impact; and
3) The recipient has not proposed the selection of an alternative not in the original finding.

Additionally, the County hereby incorporates by reference, the EA and Finding of No Significant Impact on the environment completed and approved by City of Moreno Valley.

FINDING: [58.40(g)]

X **Finding of No Significant Impact**
(The project will not result in a significant impact on the quality of the human environment)

___ **Finding of Significant Impact**
(The project may significantly affect the quality of the human environment)

Preparer Signature: _____ **Date:** 8/11/23
Name/Title/Agency: Diana Acosta, Housing Specialist

RE Approving Official Signature: _____ **Date:** 8/29/23
Name/Title/ Agency: Chair, Riverside County Board of Supervisors
KEVIN JEFFRIES

FORM APPROVED COUNTY COUNSEL
BY: _____ 8/7/2023
PAULA S. SALCIDO DATE

ATTEST:
KIMBERLY A. RECTOR, Clerk
By _____
DEPUTY

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Statement of Purpose and Need for the Proposal: [40 CFR 1508.9(b)]

The purpose of the proposed Project is to provide affordable housing for low- to moderate-income single-family households earning below 80% of the Area Median Income, first time buyers, with a preference for U.S. Veterans.

Description of the Proposal: Include all contemplated actions which logically are either geographically or functionally a composite part of the project, regardless of the source of funding. [24 CFR 58.32, 40 CFR 1508.25]

The proposed Project is an affordable residential development on a 1.4-acre parcel located on the north side of Eucalyptus Avenue between Heacock Street and Indian Street in the City of Moreno Valley. The Project site is identified as Accessor's Parcel Number (APN) 481-270-058 and consists of vacant land with visible signs of routine disturbance. The Project site contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris scattered throughout the site. The proposed Project will include the subdivision of 1.4 acres into seven (7) lots through a certificate of compliance process. The lots will range in size from 6,330 sq. ft. to 6,934 sq. ft.

The proposed development consists of seven (7) for-sale single-family residential homes; consisting of four (4) three-bedroom, two-bath units and three (3) four-bedroom, two bath units, that range in size from 1,290 sq. ft. to 1,700 sq. ft plus attached two car garage, and included front and backyards.

The proposed development will be an affordable housing project that serves seven (7) low- to moderate-income single-family households earning below 80% of the Area Median Income, first time buyers, with a preference for U.S. Veterans.

Existing Conditions and Trends: Describe the existing conditions of the project area and its surroundings, and trends likely to continue in the absence of the project. [24 CFR 58.40(a)]

The 1.4-acre site is currently vacant and contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris scattered throughout the site. The Project site contains visible signs of routine disturbance and is located on the north side of Eucalyptus Avenue between Heacock Street and Indian Street.

Trends: Describe the existing conditions of the project area and its surroundings, and trends likely to continue in the absence of the project. [24 CFR 58.40(a)]

The Southern California Association of Governments (SCAG) reports that Moreno Valley's population rose from 142,379 in 2000 to 208,838 in 2020, representing a 46.7 percent increase. The SCAG 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Growth Forecast, adopted by the SCAG Regional Council on April 7, 2016, estimates that the Moreno Valley population will reach 256,600 in 2040, representing a 22.9 percent increase. In 2018, approximately 87,817 people were employed within the City. Residents were employed in three major occupation categories: managerial/professional (24.0 percent), sales/office (23.7 percent), and production/transportation positions (21.3 percent). The first two categories tend to provide higher pay jobs, but production/transportation occupations tend to be lower pay (Moreno Valley Housing Element, 2021).

Based on U.S Department of Housing and Urban Development, 2012-2016 Comprehensive Housing Affordability Strategy (CHAS) data within the Moreno Valley Housing Element of the

General Plan, 54.2% of Moreno Valley's households fall within extremely-low, very-low, low-, and moderate-income categories, that cannot afford market rate rents or market ownership opportunities, and 43.9% of households in Moreno Valley experience cost burden related to housing costs that are greater than 30% of the household income.

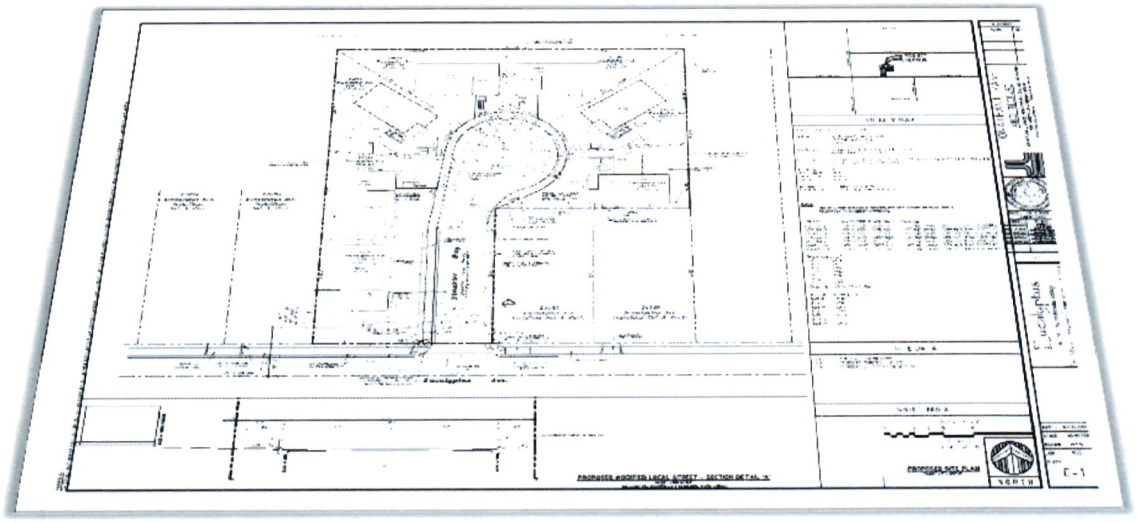
Environmental Assessment

Affordable Housing Development - Eucalyptus Avenue

(North side of Eucalyptus Avenue between Heacock Street and Indian Street)
APN: 481-270-058

City of Moreno Valley

Riverside County • California 92553



Determinations and Compliance Findings for HUD-assisted Projects
24 CFR Part 58

Preparer:

CASC Engineering and Consulting, Inc.
Planning Division
1470 E. Cooley Drive
Colton, CA 92324
Office: (909) 783-0101
Fax: (909) 783-0108

Responsible Entity:

City of Moreno Valley
Sean Kelleher, Planning Official
Community Development, Planning Division
14177 Frederick Street
Moreno Valley, CA 92553
Office: (951) 413-3215
Email: seanke@moval.org

February 15, 2022

Table of Contents

APPENDICIES

Appendix A - Eucalyptus Residential Neighborhood Air Quality & Greenhouse Gas Memorandum. Urban Crossroads, Inc. August 19, 2022.

Appendix B - Phase I Cultural Resources Assessment Eucalyptus HUD Project, Riverside County, California, APN 481270058. Duke Cultural Resource Management, LLC. August 2022.

Appendix C - Eucalyptus HUD Project Letter, Agua Caliente Band of Cahuilla Indians. February 2, 2023.

Appendix D - Eucalyptus Residential Neighborhood Construction, Noise Impact Analysis, City of Moreno Valley. Urban Crossroads, Inc. August 4, 2022.

Appendix E - Preliminary Geotechnical Investigation, Proposed Residential Development, APN 481-270-058, Moreno Valley, California. LOR Geotechnical Group, Inc. June 27, 2022.

Project Information:

Project Name:	Affordable Housing Development – Eucalyptus Avenue
Responsible Entity [24 CFR 58.2(a)(7)]:	City of Moreno Valley Community Development Department
Grant Recipient [24 CFR 58.2(a)(5)]:	*Same as Responsible Entity*
Certifying Officer [24 CFR 58.2(a)(2)]:	Sean Kelleher, Planning Official City of Moreno Valley Community Development, Planning Division 14177 Frederick Street Moreno Valley, CA 92553 Office: (951) 413-3215 Email: seanke@moval.org
Project Representative:	Lissette Montoya, Avant-Garde Inc. 807 S. Lemon Avenue Diamond Bar, CA 91789 Office: (909) 895-7146 Email: lmontoya@agi.com.co
Preparer:	Frank Coyle, Director of Planning Corporate Headquarters, CASC Engineering and Consulting, Inc.
Consultant (if applicable):	CASC Engineering and Consulting, Inc 1470 E. Cooley Drive Colton, CA 92324 Office: (909) 783-0101
Direct Comments To:	Sean Kelleher, Planning Official City of Moreno Valley Community Development, Planning Division 14177 Fredrick Street Moreno Valley, CA 92553 Office: (951) 413-3206 Email: planning@moval.org
Project Location:	North side of Eucalyptus Avenue between Heacock Street and Indian Street in the City of Moreno Valley. Assessor Parcel Number (APN) 481-270-058

Description of the Proposed Project [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:

The proposed Project is an affordable residential development on a 1.4-acre parcel located on the north side of Eucalyptus Avenue between Heacock Street and Indian Street in the City of Moreno Valley ("City"). See *Figures A-1, A-2*, and *A-3* for illustrations of the Project's regional and local vicinity. The Project site is identified as Accessor's Parcel Number (APN) 481-270-058 and consists of vacant land with visible signs of routine disturbance. The Project site contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris scattered throughout the site. The proposed Project will include the subdivision of 1.4 acres into seven (7) lots through a certificate of compliance process. The lots will range in size from 6,330 sq. ft. to 6,934 sq. ft. (*Figure A-4 Lot Division*).

The proposed development consists of seven (7) single-family residential homes that range in size from 1,290 sq. ft. to 1,700 sq. ft plus a patio and garage. The residential lots will have a 40% lot coverage. Access for each residence will be provided off Street A, which is proposed to be constructed as a Modified Local Street (50' right-of-way). Each home will have a front and rear yard, a patio, and a 2-car garage (*Figure A-5 Site Plan*).

The Project site is zoned R20/Village Residential (R20 – SP 204 VR) within the Village Plan Specific Plan (SP 204) which constitutes residential development allowing a range of densities from small, to single-family lots with detached homes, to attached multi-family complexes. Additionally, the Project site has a General Plan designation of R20 Residential.

The proposed development will be an affordable housing project that serves seven (7) low- to moderate-income single-family households earning below 80% of the Area Median Income, first time buyers, with a preference for U.S. Veterans. The Project site is located within the HUD-CDBG Low/Med Block Group Administrative District. The City's vision for the Project is to develop affordable housing with funding supported by HOME funds through the Department of Housing and Urban Development (HUD).

The Project is anticipated to qualify as a CEQA Categorical Exemption under *Article 19. Categorical Exemptions, Section 15332. Infill Development*. Based on the proposed seven (7) dwelling units and a public cul-de-sac street, the Project will require the preparation of an Environmental Assessment and Findings of No Significant Impact (EA/FONSI) per NEPA.

Statement of Purpose and Need for the Proposal [40 CFR 1508.9(b)]:

The purpose of the proposed Project is to provide affordable housing for low- to moderate- income single-family households earning below 80% of the Area Median Income, first time buyers, with a preference for U.S. Veterans. The Project will further the City's goal of developing viable urban communities by providing decent housing and a suitable living environment for residents who do not have the financial means to reasonably afford purchasing a market rate single-family unit.

The Eucalyptus Avenue Affordable Housing Project is necessary to satisfy the City's 6th Cycle Regional Housing Needs Assessment (RHNA) allocation and to comply with the 2021-2029 City of Moreno Valley General Plan Housing Element. Moreno Valley's RHNA allocation for the 2021-2029 planning period was determined by the Southern California Association of Governments (SCAG) to be 13,627 housing units, including 3,779 units for very low-income households, 2,051 units for low-income households, 2,165 units for moderate-income households, and 5,631 units for above moderate-income households.

According to the California Department of Housing and Community Development (HCD) Guidance, projects that have been approved, permitted, or received a Certificate of Occupancy during the projection period (December 2020 to October 2029) can be counted towards the 2021-29 cycle RHNA. The 2021-2029 Moreno Valley Housing Element identifies these projects as Pipeline Projects. In total the Housing Element identifies sixty-nine (69) Pipeline Projects that will result in the construction of 5,015 units, including 119 lower-income units, 1,259 moderate-income units, and 3,637 above moderate-income units. The Eucalyptus Avenue Affordable Housing Project is identified in the 2021-2029 Housing Element as a Pipeline Project that will produce seven (7) affordable single-family units.

Existing Conditions and Trends [24 CFR 58.40(a)]:

Existing Conditions: The Project site is located within the western portion of Moreno Valley, zoned as R20/Village Residential (R20 – SP 204 VR) within the Village Plan Specific Plan (SP 204) with a General Plan land use designation of R20 Residential. The property consists of one (1) parcel that has a gross lot area of 60,984 square feet (1.4 acres) and approximately 125 feet of frontage along the north side of Eucalyptus Avenue. The 1.4-acre site is currently vacant and contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris scattered throughout the site (*Figures A-6 – A-11 Site Photos*). The Project site contains visible signs of routine disturbance and is located on the north side of Eucalyptus Avenue between Heacock Street and Indian Street. Eucalyptus Avenue is maintained by the City and is classified by the General Plan Circulation Element as an Arterial Street running east/west. Arterial streets carry the majority of traffic traveling through the City and provide access to freeways as well as major activity centers and residential areas.

The surrounding and adjoining properties are zoned R20/Village Residential (R20 – SP 204 VR) and Corridor Mixed Use (COMU) District/Specific Plan Village Residential (COMU - SP 204 VOR). The surrounding area is developed with single-family residential, multi-family residential, and office uses, with vacant lots scattered between the developed areas. The Project site is depicted in the U.S. Geological Survey (USGS) San Bernardino, California 7.5-minute topographic quadrangle, Township 3 South, Range 3 West, Section 6, at an approximate elevation of 1,618 feet.

The Riverside Transit Agency (RTA) provides a bus service near the proposed Project site. The closest bus stop is near the intersection of Heacock Street and Eucalyptus Avenue, an approximate 3-minute walk (0.1 miles) west of the Project site. Route 11 provides service to the Heacock Street and Eucalyptus Avenue bus stop. Route 11 connects the Project site to the Moreno Valley Mall and March Air Reserve Base/Inland Port Airport. Additional bus routes within Moreno Valley such as Routes 16, 18, 19, and 20 connect to Route 11 and provide access from the Project site to Moreno Valley March Field Metrolink Station, Moreno Valley College, Kaiser Permanente Hospital, UC Riverside, and Perris Station Transit Center. Near the Project site, Route 11 travels along Heacock Street and operates at 70-minute headways on weekdays. Commuter rail service is provided by Metrolink, which is operated by the Southern California Regional Rail Authority (SCRRA). Metrolink train service is available between the counties of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and north San Diego. The Project area is served by the Perris Valley Line, which runs north-south between the Perris Station Transit Center and Moreno Valley/March Field Station. The Moreno Valley/March Field Station is the nearest Metrolink station to the Project site and is approximately three miles (3) miles southwest of the Project site.

Trends: The Southern California Association of Governments (SCAG) reports that Moreno Valley's population rose from 142,379 in 2000 to 208,838 in 2020, representing a 46.7 percent increase. The SCAG 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy Growth Forecast, adopted by

the SCAG Regional Council on April 7, 2016, estimates that the Moreno Valley population will reach 256,600 in 2040, representing a 22.9 percent increase. In 2018, approximately 87,817 people were employed within the City. Residents were employed in three major occupation categories: managerial/professional (24.0 percent), sales/office (23.7 percent), and production/transportation positions (21.3 percent). The first two categories tend to provide higher pay jobs, but production/transportation occupations tend to be lower pay (Moreno Valley Housing Element, 2021).

Based on U.S Department of Housing and Urban Development, 2012-2016 Comprehensive Housing Affordability Strategy (CHAS) data within the Moreno Valley Housing Element of the General Plan, 54.2% of Moreno Valley's households fall within extremely-low, very-low, low-, and moderate-income categories, that cannot afford market rate rents or market ownership opportunities, and 43.9% of households in Moreno Valley experience cost burden related to housing costs that are greater than 30% of the household income.

Per SCAG, between 2000 and 2018, median home sales prices in Moreno Valley increased 187 percent and 2018 median home sales prices in Moreno Valley were $330,000. Since 2010, ownership housing has experienced a much sharper rise in price than rental housing in the City, with median sales prices rising 98 percent for single-family homes and 105 percent for condominiums. These trends are likely to continue in the absence of the proposed Project. The Project will help to stem the trends outlined above by providing affordable housing units targeted to the specific needs of low-income first-time home buyers, with a preference for U.S. Veterans.

Funding Information:

Estimated Total HUD Funded Amount:

Home Investment Partnership Funds (HOME-City):	$2,000,000

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]:

The maximum subsidy allowed under current regulations.

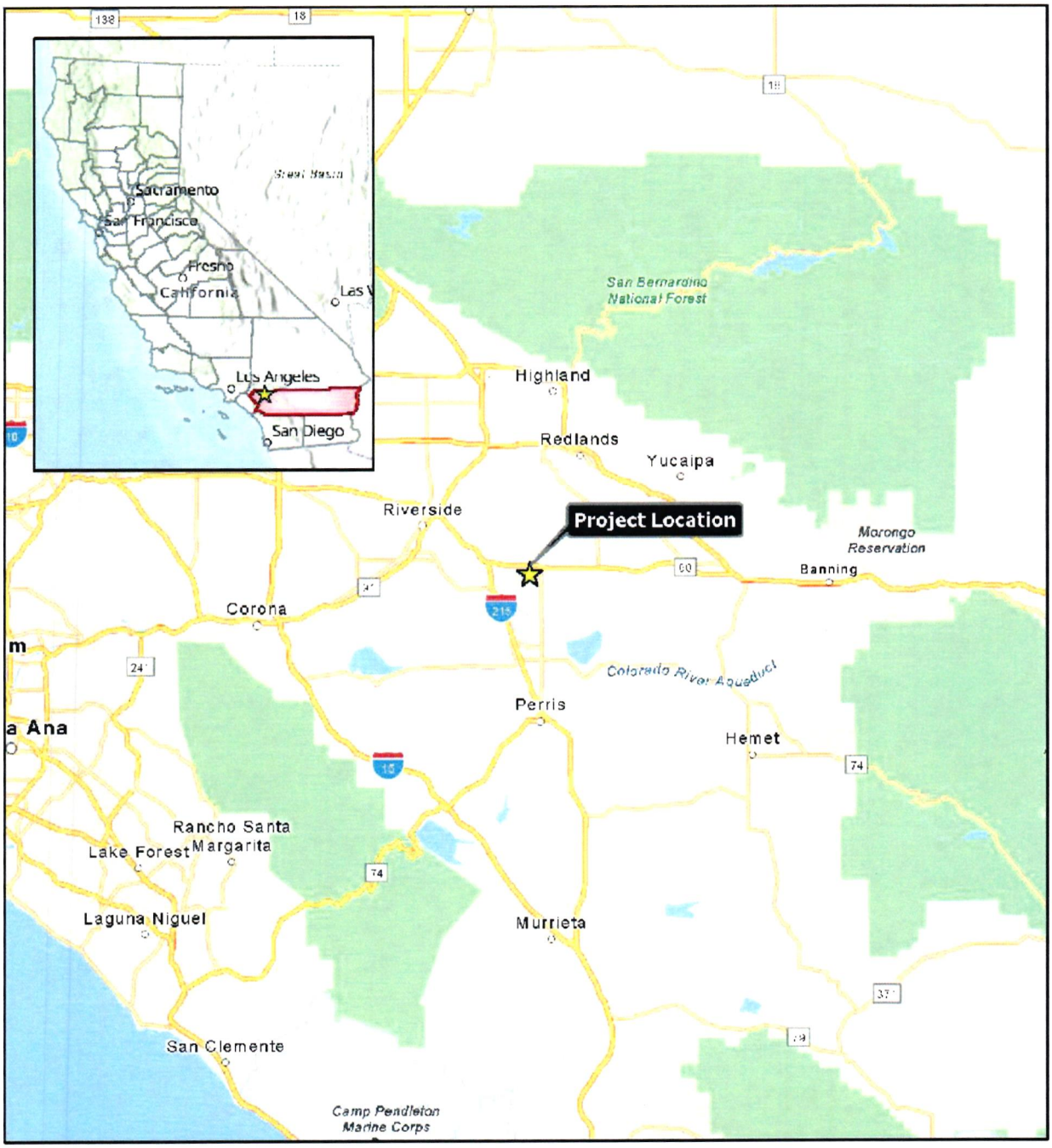
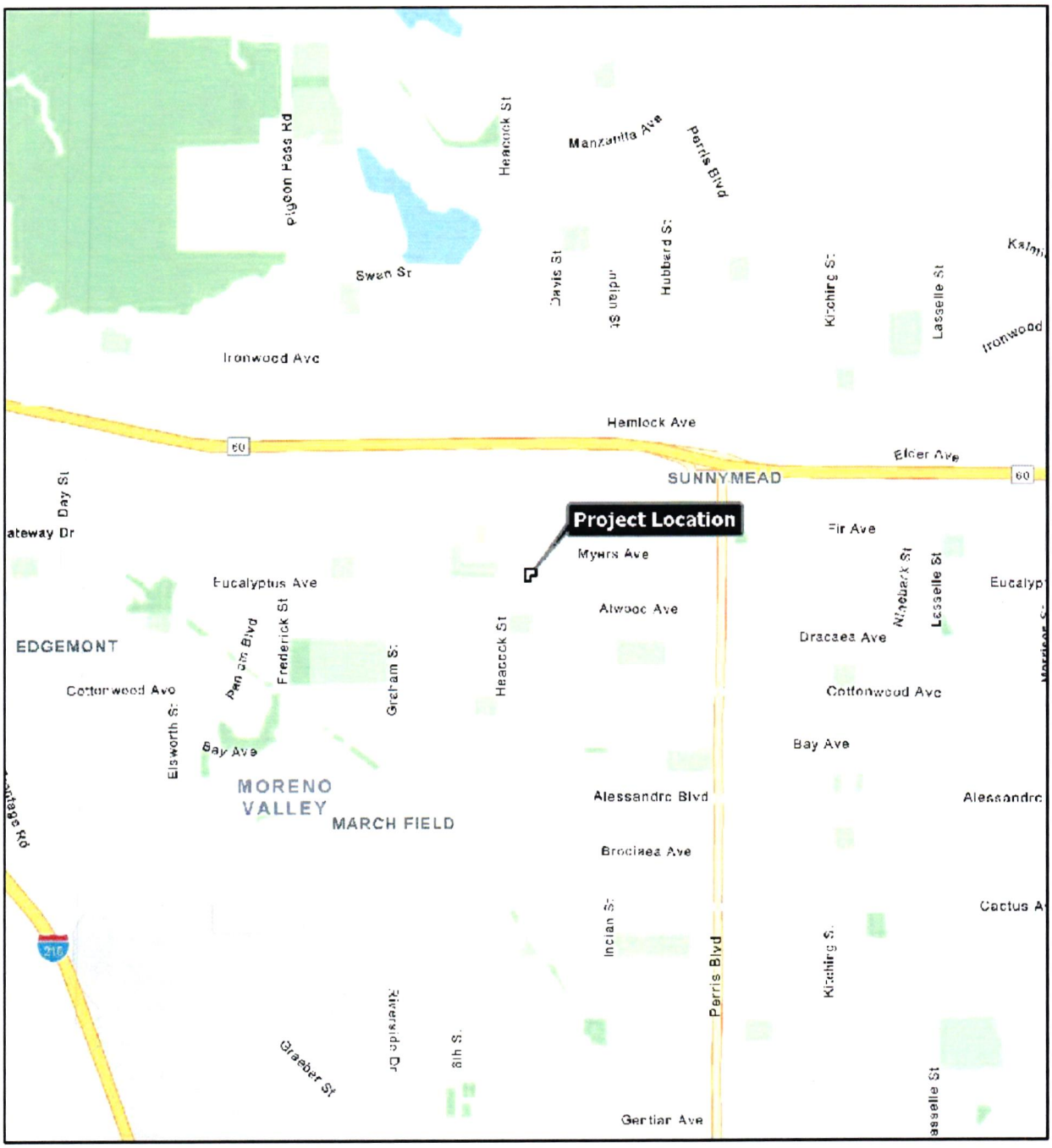


Figure A-1 Regional Map

Affordable Housing Development – Eucalyptus Avenue
City of Moreno Valley, Riverside County, CA

Loma Linda University, UC Riverside, City of Moreno Valley, County of Riverside, California, State Parks, Esri, HERE, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, Esri,

APN: 481-270-058



CASC Engineering and Consulting

N

0 0.38 0.75 1.5 Miles

Figure A-2 Vicinity Map

Affordable Housing Development – Eucalyptus Avenue
City of Moreno Valley, Riverside County, CA

APN: 481-270-058

CASC Engineering and Consulting

N

0 137.5 275 550
US Feet

Figure A-3 Project Boundary

Affordable Housing Development – Eucalyptus Avenue
City of Moreno Valley, Riverside County, CA

San Bernardino County, Maxar, Esri Community Maps Contributors, Loma Linda University, UC Riverside, City of Moreno Valley, County of Riverside, County of San Bernardino, California State Parks, © OpenStreetMap, Microsoft, Esri, HERE, Garmin,

APN: 481-270-058

Figure A-4 Lot Division

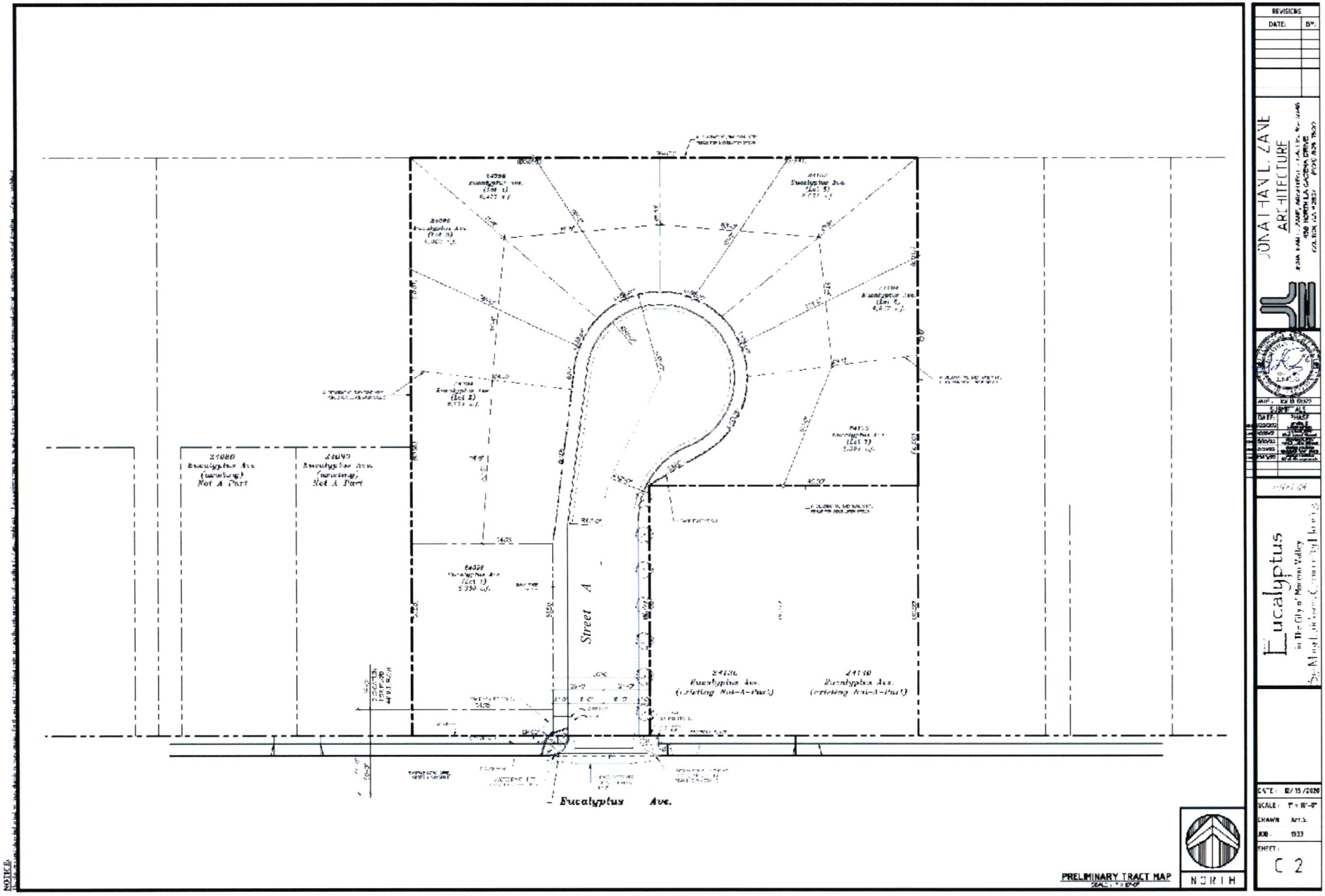


Figure A-5 Site Plan

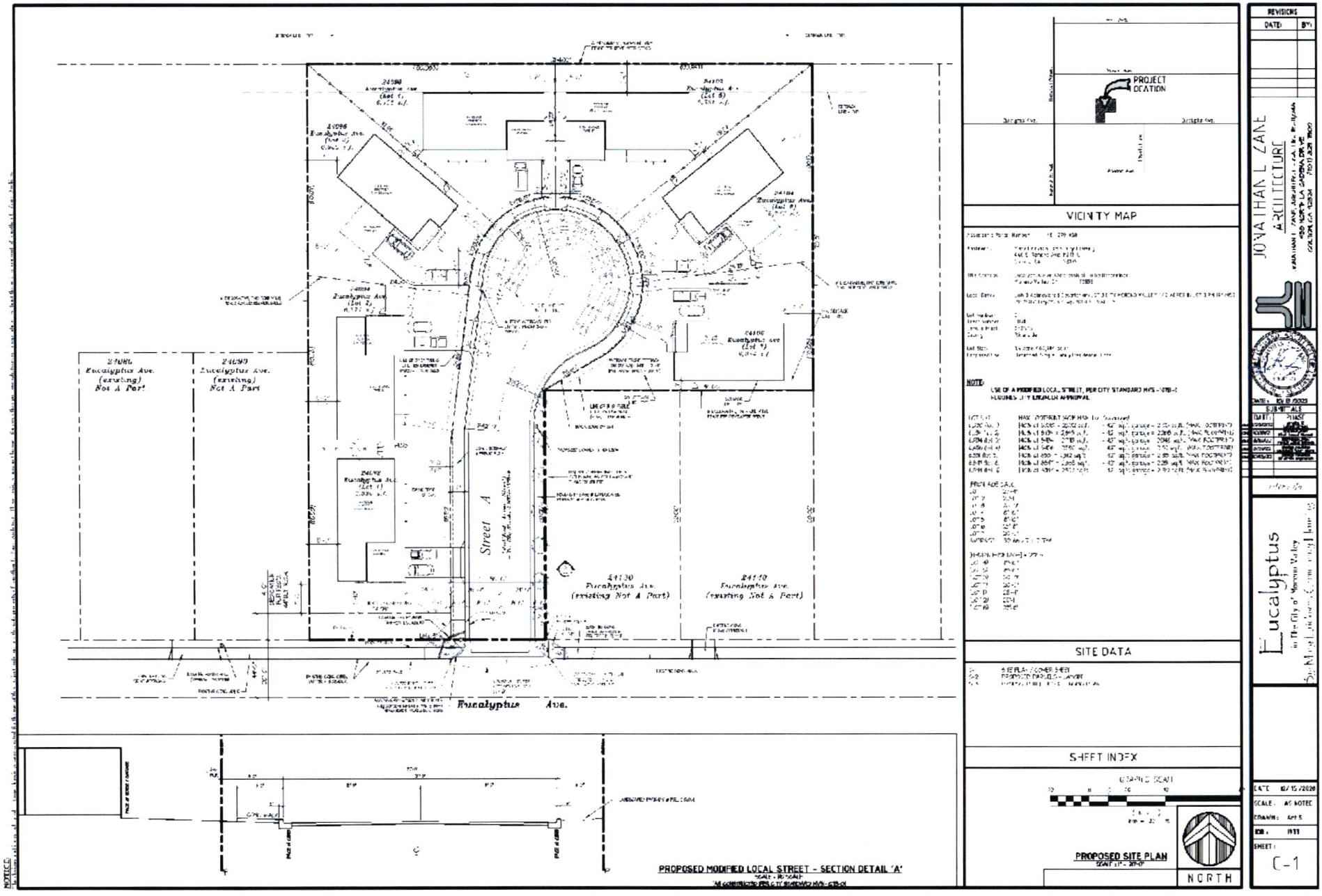


Figure A-6 Site Photos
View looking north across site from Eucalyptus Avenue

Source: Google Maps, Image capture: March 2022

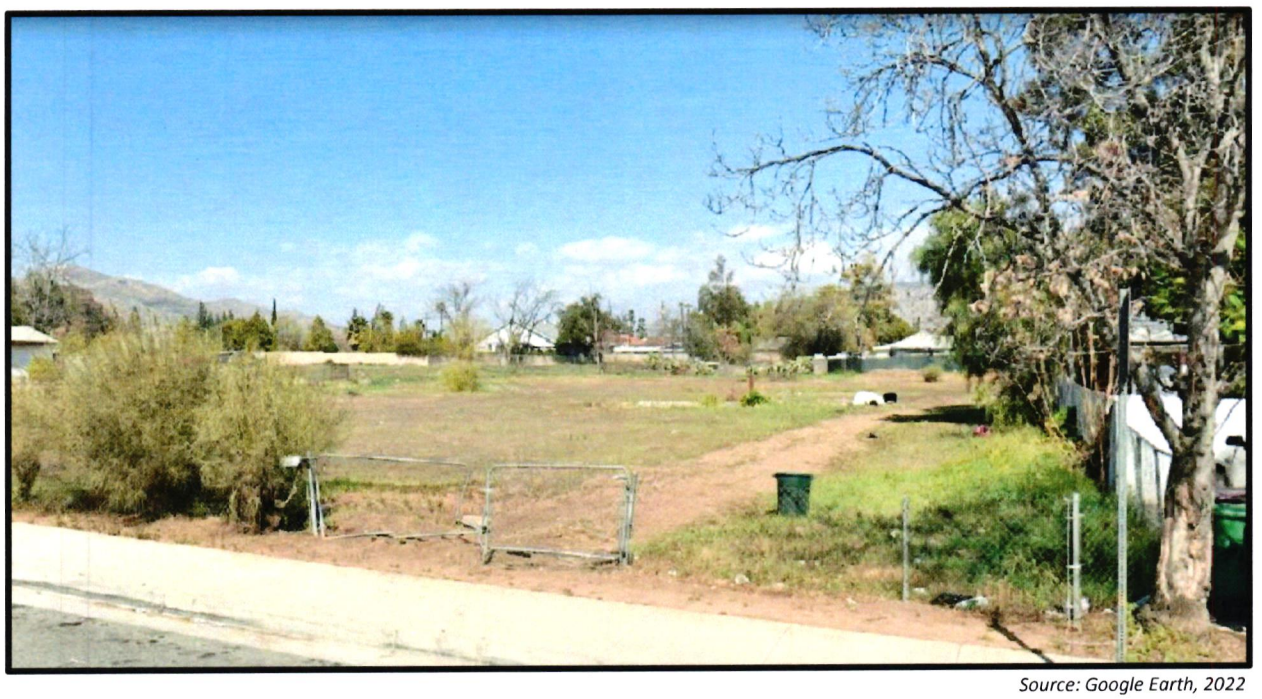
Figure A-7 Site Photos
View looking northeast across site from Eucalyptus Avenue

Source: Google Earth, 2022

Figure A-8 Site Photos
View looking northeast across site from SW portion of the property

Source: Duke CRM, Phase I Cultural Resources Assessment, Image capture: July 29, 2021

Figure A-9 Site Photos
View looking northwest across site from Eucalyptus Avenue



Source: Google Earth, 2022

Figure A-10 Site Photos
View looking east across site in the NE portion of the property (zoomed out)

Source: Duke CRM, Phase I Cultural Resources Assessment, Image capture: July 29, 2021

Figure A-11 Site Photos
View looking east across site in the NE portion of the property (zoomed in)

Source: Duke CRM, Phase I Cultural Resources Assessment, Image capture: July 29, 2021

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required? *See right.*		Compliance Determinations *Environmental impacts resulting from the Project will be avoided pursuant to the provisions of the General Plan. Standard project Best Management Practices have been included under the mitigation section to protect unknown resources that might be discovered during construction.*
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6			
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐	No ☑	The March Air Reserve Base/Inland Port Airport is located approximately 2.4 miles southwest of the Project site. The site is not located within a Land Use Compatibility Zone. Additionally, the nearest private airstrip is Perris Valley Airport located approximately eleven (11) miles south of the Project site. Therefore, the Project would not result in a safety hazard or excessive noise for people residing in the Project area. **Source:** Moreno Valley General Plan, Safety Element, adopted June 15, 2021; March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan. Airport Land Use Commission, adopted November 13, 2014, Final (rcaluc.org)
Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐	No ☑	The Coastal Barrier Resources Act of the United States (CBRA, Public Law 97-348), enacted October 18, 1982, designated various undeveloped coastal barriers, depicted by a set of maps adopted by law, for inclusion in the John H. Chafee Coastal Barrier Resources System (CBRS). Areas so designated were made ineligible for direct or indirect Federal national security, navigability, and energy exploration. CBRS areas extend along the coasts of the Atlantic Ocean and the Gulf of Mexico, Puerto Rico, the U.S. Virgin Islands, and the Great Lakes, and consist of 857 units. There are no Coastal Barrier Resources in California. Therefore, the Project site is not located in a coastal zone. **Source:** United States Government. The Coastal Barrier Resources Act of the United States. Enacted October 18, 1982. CBRA, Public Law 97-348.

Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐	No ☑	The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates that the Project site is located within Zone X, which is defined as outside the 100-year floodplain. FEMA has determined these areas of low flood risk under the National Flood Insurance program, and flood insurance is not required for these properties. The Project site is not located within a FEMA identified Special Flood Hazard Area, and the Project will not place housing within a 100-year floodplain. Therefore, impacts are expected to be less than significant. The Community Panel Number is 06065C0761G (effective 8/28/2008) for the site. **Source:** Federal Emergency Management Agency. FEMA Flood Map No. 06065C0761G. USGS The National Map October 2020, FEMA Flood Map Service Center
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5			
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐	No ☑	**General Conformity** The 1990 Amendment to Clean Air Act (CAA) Section 176 requires the federal EPA to promulgate rules to ensure that federal actions conform to the appropriate State Implementation Plan (SIP). These rules, known as the General Conformity Rule (40 C.F.R. Parts 51.850–51.860 and 93.150–93.160), require any federal agency responsible for an action in a federal nonattainment/maintenance area to demonstrate conformity to the applicable SIP, by either determining that the action is exempt from the General Conformity Rule requirements or subject to a formal conformity determination. Actions would be exempt, and thus conform to the SIP, if an applicability analysis shows that the total direct and indirect emissions of nonattainment/maintenance pollutants from project construction and operation activities would be less than specified emission rate thresholds, known as de minimis levels (40 C.F.R. Section 93.153, Applicability). If not determined exempt, an air quality conformity analysis would be required to determine conformity. The General Conformity Rule is applicable only for project criteria pollutants and their precursors for which an area is designated nonattainment or that is covered by a maintenance plan. The Project site is in the South Coast Air Basin (SCAB) within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). Currently, the SCAB is in nonattainment for Ozone (O3) and PM2.5 under federal air quality standards. Therefore, the General Conformity Rule is applicable to project emissions of O3 and PM2.5.

Adverse Impacts under NEPA

A NEPA impact analysis differs from the General Conformity analysis in that any pollutant emissions recommended to be considered by the local agency are evaluated as well as nonattainment pollutant emissions. As the proposed Project is located entirely within the SCAQMD portion of Riverside County, the appropriate criteria are those issued by the SCAQMD.

Air Quality Impacts Assessment

Urban Crossroads, Inc. prepared an Air Quality & Greenhouse Gas Memorandum for the Eucalyptus Avenue Affordable Housing Project. The memorandum (memo) was completed on August 19, 2022. A summary follows, and is included as Appendix A.

The purpose of the memo was to demonstrate if the proposed Project is anticipated to generate air quality or greenhouse gas emissions that could exceed applicable thresholds for construction and operational activity. Urban Crossroads utilized the CalEEMod Version 2022 to calculate construction-source and operational-source criteria pollutant (VOCs, NOx, CO, SOx, PM10, and PM2.5) and GHG emissions from direct and indirect sources.

Construction emissions were modeled in CalEEMod 2022 utilizing CalEEMod defaults for phasing, and equipment assumptions. As shown in Table 1-1, the proposed Project would not result in an exceedance of the SCAQMD regional significance threshold for construction source emissions.

Table 1-1: Proposed Project Regional Construction Emissions

Source	Emissions (lbs/day)					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	1.97	19.4	17.5	0.02	2.91	1.78
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Additionally, emissions during peak construction activity will not exceed the SCAQMD's localized significance thresholds as illustrated in Table 1-2. As such, the Project's localized impacts during construction activity would be less than significant.

Table 1-2: Project Localized Construction Impacts

Source	Emissions (lbs/day)			
	NOx	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	19.4	17.5	2.91	1.78
SCAQMD Localized Threshold	118	602	4	3
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**

Operational activities associated with the Project would result in emissions of CO, VOCs, NOx, SOx, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, and mobile source emissions.

The estimated operation-source emissions from the Project are summarized in Table 1-3. Operational source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

Table 1-3: Proposed Project Regional Operational Emissions

Source	Emissions (lbs/day)					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	0.76	0.89	0.38	4.48	0.41	0.27
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

For detailed construction and operation model outputs, see the Eucalyptus Residential Neighborhood Air Quality & Greenhouse Gas Memorandum, Appendix A.

The proposed Project does not have the potential to emit significant emissions of air pollution. Although located in a non-attainment area, this Project conforms to the EPA-approved State Implementation Plan and the California Air Resource Board (CARB). The Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality.

Source: Urban Crossroads. Eucalyptus Residential Neighborhood Air Quality & Greenhouse Gas Memorandum, August 19, 2022. (Appendix A); 2022 Air Quality Management Plan (AQMP). South Coast Air Quality Management District, South Coast AQMD

			Air Quality Management Plan; Maps of State and Federal Area Designations. California Air Resources Board, Maps of State and Federal Area Designations |California Air Resources Board
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐	No ☑	The Project site is located in the City of Moreno Valley within the County of Riverside. The County of Riverside is not located within the Coastal Zone Boundary; thus, the Project site is not located in a designated coastal zone. The Project does not involve the placement, erection, or removal of materials, nor increase the intensity of use in the Coastal Zone. **Source:** California Coastal Commission. Local Coastal Program Areas Map. Local Coastal Program Areas
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☐	No ☑	A one-mile query of state and federal databases and an aerial review of the Project site failed to locate any contamination or toxic substances at or in the immediate vicinity of the Project site. Resources consulted: 1. California Department of Toxic Substances Control, EnviroStor Database 2. California State Water Resources Control Board, GeoTracker Database 3. USEPA Resource Conservation & Recovery Act (RCRA). Lists of Facilities on the Resource Conservation and Recovery Act (RCRA) All databases failed to identify any associated contaminants with toxic, hazardous, and radioactive, materials or contamination from petroleum in the Project site or its immediate vicinity. Per review of the Cortese List, the Project site is not included on a list of hazardous materials sites, nor are there any hazardous materials sites listed in the vicinity of the Project. EnviroStor tracks cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues. The EnviroStor database identified one (1) inactive, voluntary cleanup site that is approximately 0.7 miles north of the Project site. The cleanup site was utilized for a dry-cleaning business, and the potential contamination of concern is tetrachloroethylene (PCE). Due to the distance between the voluntary cleanups site and the Project site, contamination of the Project site is not a concern. Therefore, the site is safe for residential development.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☐	No ☑	The proposed Project is located within the Western Riverside County Multiple Species Habitat Conservation Plan (WR-MSHCP) planning area, which outlines policies for conservation of habitats and natural communities. However, the site is not

			located within an MSHCP Criteria Cell, and there are no known significant biological resources on the site. According to the MSHCP Information Map, the Project site is not located within a survey area for amphibian, burrowing owl, mammal, narrow endemic plant, criteria area species, or Delhi Sands Flower-loving Fly. The Project site is currently vacant and contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris scattered throughout the site. The Project site is located within an urban area that is developed with single-family residential, multi-family residential, and office uses. Therefore, the proposed Project will not affect any endangered species. **Source:** Riverside Conservation Authority, MSHCP Information Map, RCA MSHCP Information Map (arcgis.com)
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐	No ☑	A one-mile query of the Cal EPA Regulated Portal database for Explosive & Flammable Hazards adjacent to the Project site was reviewed. One (1) hazardous site was identified approximately 0.4 miles east of the Project site. The Verizon Wireless Facility is identified as a chemical storage facility due to the storing of a maximum daily amount of 120-599 gallons of Diesel Fuel No. 2. There are no explosive or flammable operations as part of the proposed residential development or within the immediate vicinity of the Project site. The Project site is surrounded by single-family residential, mufti-family residential, and office land uses. Therefore, the Project will not be located near any explosive or thermal source hazards. **Source:** CalEPA Regulated Site Portal. CalEPA, CalEPA Regulated Site Portal
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐	No ☑	The Farmland Protection Policy Act states: "Farmland does not involve land already in or committed to urban development or water storage. Farmland 'already in' urban development or water storage includes all such land with a density of thirty (30) structures per 40-acre area." (7 CFR 658.2(a)) According to this definition, the Project site is already in an urban developed location. The Project is not proposing to change the current land use designation of Residential 20 (R20) District/Specific Plan Village Residential (R20 - SP 204 VR) which identifies areas appropriate for a range of high-density multi-family housing types with a permitted density up to twenty (20) dwelling units per acre. Furthermore, the proposed Project does

			not include the conversion of prime or unique farmland, or other farmland of statewide or local importance. The Project site is identified as Urban and Built-Up Land and is therefore not within an area capable of supporting significant farmland. **Source:** California Department of Conservation. California Important Farmland Finder GIS Application, California Important Farmland Finder
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☐	No ☑	The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates that the Project site is located within Zone X, which is defined as outside the 100-year floodplain. FEMA has determined these areas of low flood risk under the National Flood Insurance program, and flood insurance is not required for these properties. The Project site is not located within a FEMA identified Special Flood Hazard Area, a 100-year floodplain, or a 500-year floodplain. Therefore, the Project site is outside of the 1% and 0.2% annual chance floodplains. The nearest dam to the Project site is Lake Perris, located approximately 5.4 miles southeast of the Project site. According to the City of Moreno Valley General Plan Safety Element, the Project site is not located in an identified dam inundation area. Additionally, due to the position of the proposed project, mudflows from local mountains would be unlikely due to surrounding development. The Project will be designed and conditioned, to ensure that flood flows will not be impeded or redirected. **Source:** Moreno Valley Local Hazard Mitigation Plan, October 4, 2011, revised May 2017, Moreno Valley LHMP (moval.org)
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☐	No ☑	Pursuant to 36 CFR 800.4(d)(1), the City determined that the HUD funded development of seven (7) affordable single-family homes located on Eucalyptus Avenue will result in "No Historic Properties Affected." The Project does not include any activity that may have any potential effects on properties with historic, religious, or cultural significance. The City initiated consultation with the State Historic Preservation Office (SHPO) in a letter dated November 22, 2022. The City provided the Project Description, Project Location Map, National Register of Historic Places Map, Phase I Cultural Resources Assessment, Riverside County Assessor's Map, Property Site Photos, Tentative Map, Site Plan, Tribal Directory Assessment, and Letters to Tribes with Interest in Riverside County. In a letter dated December 27, 2022, the SHPO did not object to the

			City's determination of "No Historic Properties Affected." On November 23, 2022, the City sent out notices in accordance with Section 106 to all Tribal Governments with interest in Riverside County. The City received responses from the Yuhaaviatam of San Manuel Nation and the Fort Yuma Quechan Tribe deferring consultation. The City received a response from the Agua Caliente Band of Cahuilla Indians (ACBCI) requesting copies of any cultural resource documentation (report and site records) generated in connection with the Project. On February 02, 2023, the City received a letter from the Agua Caliente Band of Cahuilla Indians (ACBCI) stating that the Tribe reviewed the documents, and the concerns of the ACBCI Tribal Historic Preservation Office (THPO) have been addressed and proper mitigation measures have been proposed to ensure the protection of tribal cultural resources (Appendix C). The letter dated February 02, 2023, concluded AB52 consultation efforts. Additionally, a Phase I Cultural Resources Assessment was prepared by Duke Cultural Resources Management, LLC in August 2022. On July 20, 2022, a historical/archaeological resources records search service for the Project area was provided by the Eastern Information Center (EIC). The records search included a review of all recorded historic and prehistoric archaeological sites within a ½ mile search radius of the Project area, as well as a review of known cultural resource survey and excavation reports. The results of the records search from the EIC indicated that no cultural resources are recorded within the Project site; however, two (2) historic era cultural resources were identified within the records search radius. Sites P-33-007284 and P-33-007289, are residential structures constructed circa 1915, and they are located approximately ½ mile northeast of the Project site. Duke CRM concluded that although there are several historic resources in the vicinity, none will be impacted by the proposed Project. On June 22, 2022, Duke CRM requested a Sacred Lands File search from the Native American Heritage Commission (NAHC). The NAHC responded on July 29, 2022, indicating no recorded tribal resources have been recorded in proximity to the Project area. However, the NAHC provided a Native American Contact List that might be contacted regarding tribal resources not on file with the NAHC. On July 29, 2021, Duke CRM archaeologist conducted an intensive pedestrian field survey of the Project

			area. The field survey produced negative results for potential cultural resources. The Project area had been cleared of structures and vegetation with a few resprouted ornamental plants. What remained were three (3) slab foundations within poured footings and a concrete chunk debris pile. Construction techniques are consistent with expectations based on aerial imagery analysis, circa 1960s construction. Given their relatively modern age and condition, these features were not recorded. Based on research, including a records search with the South Central Coastal Information Center (SCCIC), and the result of survey, DUKE CRM finds the Project property has low sensitivity at both the surface and subsurface prehistoric resources. Based on research regarding the age of the structural remnants and their lack of integrity, the area of potential effects has a low sensitivity for the presence of historic resources eligible for the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR). Should historic resources exist, avoidance and preservation of historic properties/historical resources would be the preferred measure for archaeological resources under both National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA). Training and protocol measures are recommended to identify potential historic properties/historical resources during construction. **Mitigation Measures** <u>CUL-1 Archaeological Sensitivity Training</u> Prior to disturbance, either demolition or excavation, a qualified archaeologist should present to field staff, cultural resources sensitivity training. The archaeologist shall summarize the types of resources that may be present subsurface, as well as protocols in the event inadvertent cultural resource finds are discovered (see CUL-2). <u>CUL-2 Inadvertent Finds Procedures</u> If intact subsurface cultural resources are encountered during earth moving, work should halt with fifty (50) feet of the find until such time as a qualified archaeologist can be retained to assess the find. The archaeologist may recommend that these cultural resources undergo evaluation to determine NRHP- and CRHR-eligibility with a focus of Criterion D/4 regarding data potential. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition

			pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, a cemetery is place where six or more human bodies are buried (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052). **Source:** Duke Cultural Resources Management, LLC. Phase I Cultural Resources Assessment, August 2022. (Appendix B)
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐	No ☑	Urban Crossroads, Inc. prepared a Eucalyptus Residential Neighborhood Construction Noise Impact Analysis on August 4, 2021, that analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. To prevent high levels of construction noise from impacting noise-sensitive land uses, Section 11.80.030 (D)(7), of the City of Moreno Valley Municipal Code limits construction activities to the hours from 7:00 a.m. to 8:00 p.m. Project construction will generate noise due to the utilization of construction equipment which will include a combination of trucks, power tools, concrete mixers, and portable generators, that when combined can reach elevated levels. The number and mix of construction equipment are expected to occur in the following stages: site preparation, grading, building construction, paving, and architectural coating. To assess the potential for short-term construction impacts, five (5) sensitive receiver locations were identified as representative locations for analysis. The five (5) sensitive receiver locations are existing residential uses (single-family and multi-family) located at: 1. 24082 Eucalyptus Avenue, approximately 10 feet west of the Project site. R1 is placed in the private single-family outdoor living areas (backyard) facing the Project site.

			2. 24130 Eucalyptus Avenue, approximately 20 feet east of the Project site. R2 is placed in the private single-family outdoor living areas (backyard) facing the Project site. 3. 24160 Eucalyptus Avenue, approximately 39 feet east of the Project site. R3 is placed at the single-family outdoor living areas (backyard) facing the Project site. 4. 14170 Eucalyptus Avenue, approximately 10 feet east of the Project site. R4 is placed in the multi-family building façade facing the Project site. 5. 24130 Eucalyptus Avenue, approximately 73 feet north of the Project site. R5 is placed in the private multi-family outdoor living areas (backyard) facing the Project site. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity (Project Site boundary) to each receiver location. The building construction noise levels are expected to range from 70.7 to 77.5 dBA Leq at the nearest receiver locations. To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA Leq is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA Leq significance threshold during Project construction activities. Therefore, the noise impacts due to Project construction noise are considered less than significant at all receiver locations. Project construction can generate varying degrees of ground-borne vibration, depending on equipment and methods used, distance to the affected structures and soil type. At distances ranging from 10 to 39 feet from the Project construction activities, construction vibration velocity levels are estimated to range from 0.018 to 0.352 in/sec PPV. Based on maximum acceptable vibration threshold of 0.4 PPV (in/sec) for older residential buildings, the typical Project construction vibration levels will satisfy the building damage thresholds at all receiver locations. Therefore, the Project-related vibration impacts are considered less than significant during the construction activities at the Project site.

			For detailed construction noise levels and construction vibration impacts model outputs, see the Eucalyptus Residential Neighborhood Construction Noise Impact Analysis, Appendix D. **Source:** Urban Crossroads. Eucalyptus Residential Neighborhood Construction Noise Impact Analysis, August 4, 2021. (Appendix D)
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐	No ☑	Sole Source Aquifers (SSA) are mapped by the US EPA. Evaluation of EPA's data shows that there are no SSA in the vicinity of the Project site. The nearest SSA is the Campo/Cottonwood Creek Aquifer SSA (ID# 58 FR 31024), which is approximately eighty (80) miles southeast of the Project site. The proposed development will be served by the Eastern Municipal Water District (EMWD) which is adequate to supply potable water for the proposed Project. **Source:** United States Environmental Protection Agency. Sole Source Aquifers GIS Application, Sole Source Aquifers (arcgis.com)
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☐	No ☑	Wetlands do not occur at the Project site or within the immediate vicinity of the site. Although the Project proposes development on a vacant site, the construction of the proposed seven (7) single-family residential homes will not impact any wetlands, marshes, wet meadows, mud flats, or natural pounds. These findings are based on a search conducted on August 12, 2022, using the U.S. Fish and Wildlife Service Wetlands Online Mapper. **Source:** U.S. Fish and Wildlife Service. National Wetlands Inventory Surface Waters and Wetlands Viewer, National Wetlands Inventory (usgs.gov)
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐	No ☑	This Project is not located near any watercourse or river that is included under the Wild and Scenic Rivers Act and no Section 7 Report is required. Furthermore, the City of Moreno Valley does not contain any Wild and Scenic Rivers (2021 Moreno Valley General Plan). The nearest Wild and Scenic River is approximately twenty-eight (28) miles east of the Project site within the San Jacinto Mountain Range. **Source:** National Park Service. Eastern Municipal Water District, July 1, 2021, Wild & Scenic Rivers (arcgis.com)
ENVIRONMENTAL JUSTICE			
Environmental Justice Executive Order 12898	Yes ☐	No ☑	The Project is being developed to expressly assist and provide housing to economically disadvantaged persons earning below 80% of the Area Median Income, first time home buyers, with a preference for U.S. Veterans. The location of the Project is centrally

			located near public transportation, schools, and other public facilities such as hospitals. The Project will not raise environmental justice issues and has no potential for new or continued disproportionately high and adverse human health and environmental effects on minority or low-income populations. Instead, the Project will help support the environmental protection of these vulnerable communities and will be an overall benefit to all citizens of Moreno Valley.

Environmental Assessment Factors [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27]

Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features, and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable, and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate.

All conditions, attenuation or mitigation measures have been clearly identified.

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.

[1] Minor beneficial impact
[2] No impact anticipated
[3] Minor Adverse Impact – May require mitigation
[4] Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	1	The proposed Project is in conformance with the City of Moreno Valley General Plan and the Village Specific Plan (SP 204). The Project site is zoned as R20/Village Residential (R20 – SP 204 VR). The Village Residential (VR) zone identifies areas appropriate for a range of densities from small, to single-family lots with detached homes to attached multi-family complexes. The SP 204 VR zone is consistent with the Project site's General Plan land use designation of R20 Residential, which permits densities up to twenty (20) dwelling units per acre. The Project will have a minor beneficial impact as it will provide affordable housing for low- to moderate- income households and conforms to the current land use and zoning designations. The proposed Project will be compatible with surrounding land uses that consist of existing single-family residential, multi-family residential, and office uses. **Source:** Moreno Valley General Plan, Land Use Element, adopted June 15, 2021; The Village Specific Plan (SP 204), City of Moreno Valley
Soil Suitability / Slope / Erosion / Drainage / Storm Water Runoff	2	**Soil Suitability / Slope** LOR Geotechnical Group, Inc. prepared a Preliminary Geotechnical Investigation on June 27, 2022 (Appendix E). LOR conducted a subsurface field exploration program on July 15, 2021, that consisted of drilling 4 exploratory borings with a truck-mounted Mobile B-61 drill rig equipped with 8-inch diameter hollow stem augers. The borings were drilled to

		depths of approximately 26 to 31.5 feet below the existing ground surface. The subsurface conditions encountered in the exploratory borings are indicative of the locations explored. The subsurface conditions presented here are not to be construed as being present the same everywhere on the site. If conditions are encountered during the construction of the Project which differ significantly from those presented in this report, LOR Geotechnical Group, Inc. should be notified immediately so they may assess the impact to the recommendations provided. As encountered within the exploratory borings, fill/topsoil materials on the order of 1 foot thick are present. The fill materials are noted to be comprised of silty sand, which was brown, dry, and loose. These materials are most likely the result of weed abatement practices (discing). Deeper fills are anticipated at the site, primarily in the areas of previous development. Underlying the fill materials at the site, older alluvial materials were encountered within all of the exploratory borings to the maximum depth explored. These units were noted to consist of silty sand and a minor unit of sandy silt/lean clay with sand. The older alluvial materials were in a relatively loose to medium dense state upon first encounter, becoming medium dense/very stiff to very dense/hard with depth based on the equivalent Standard Penetration Test (SPT) data and in-place density testing. No groundwater or groundwater seepage was encountered within any of the exploratory borings which extended to depths of between 26 and 31.5 feet below the existing ground surface. According to the State of California Department for Water Resources online database, two wells (Well No. 339347N1172408W001 and Well No. 3393471172403W001), both located approximately 0.25 to 0.3 kilometers (0.15 to 0.2 miles) to the northeast of the site, have recorded depths to groundwater for the time period from November, 2011 through March, 2021. In these wells, groundwater was measured as being at a depth ranging from 57 to 66 feet. Based on this information and the exploratory borings, groundwater is anticipated to be at a depth of 50 feet or more in the general site area. The attached Preliminary Geotechnical Investigation (Appendix E) provides a broad overview of the geotechnical and geologic factors which are expected to influence future site planning and development. Based on their field investigation and testing program, it is the opinion of LOR Geotechnical Group, Inc., that the proposed development is feasible from a geotechnical standpoint, provided that the recommendations presented in the Preliminary Geotechnical Investigation are incorporated into design and implemented during grading and construction.

		Recommendations The Project shall incorporate the recommendations provided in the Preliminary Geotechnical Investigation prepared by LOR Geotechnical Group, Inc., dated June 27, 2022 (Appendix E). The recommendations are presented in the following sections of the report: Foundation Support, Soil Expansiveness, Seismicity, General Site Grading, Initial Site Preparation, Preparation of Fill Areas, Engineered Compacted Fill, Preparation of Foundation Areas, Short-Term Evacuations, Slope Construction, Slope Protection, Foundation Design, Settlement, Building Area Slab-On-Grade, Exterior Flatwork, Wall Pressures, Sulfate Protection, Preliminary Pavement Design, and Construction Monitoring. **Erosion / Storm Water Runoff/ Drainage** The Riverside County Flood Control and Water Conservation District (RCFCWCD) is the agency responsible for the regional flood control system. RCFCWCD has prepared four Master Drainage Plans within the City (Perris Valley, Sunnymead, Moreno and Moreno Valley West End), each of which covers a different portion of the City. The Project site falls within the Sunnymead Master Drainage Plan area. The Riverside County Flood Control District and Water Conservation District (RCFC&WCD) and the City jointly maintain the storm drain system. Existing regulations at the State and regional level have been established to regulate discharge prohibitions, effluent limitations, and discharge specifications, receiving water limitations, and other provisions (i.e., monitoring and reporting, watershed management programs, control measures, and total maximum daily loads). Further, the City and RCFC&WCD have established additional local regulations for storm water runoff. Any new development or significant redevelopment are required to follow the established Low Impact Development (LID) principles and guidelines in the design of their site. New developments must not increase stormwater runoff downstream, both in rate and volume; rather they must capture it on-site for attenuation and/or recharge to control the stormwater runoff downstream. Current surface runoff of precipitation waters across the site is generally as sheet flow to the south. The proposed Project would not alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation on- or off-site. The Project will be required to incorporate a design that will have a less than significant impact on storm water runoff, drainage, and erosion. **Source:** LOR Geotechnical Group, Inc. Preliminary Geotechnical Investigation, June 27, 2022. (Appendix E); Moreno Valley General Plan, Parks and Public Safety, adopted June 15, 2021; Master Drainage Plan Maps. Riverside County Flood Control, content.rcflood.org/MDPADP/

Hazards and Nuisances including Site Safety and Noise	2	The Project proposes to construct seven (7) single-family residential homes. Project construction would require the use and transport of materials such as soils, gravel, rock, concrete, and lumber. Equipment used at the Project site during construction activities could use substances considered by regulatory bodies as hazardous, such as diesel fuel and gasoline from typical construction equipment and would therefore have the potential to discharge hazardous materials during construction. These types of materials are not acutely hazardous, and all storage, handling, use, and disposal of these materials are regulated by federal and state requirements, which the Project construction activities are required to strictly adhere to. The use, transport, storage, and disposal of hazardous materials must comply with existing regulations established by several agencies, including the Department of Toxic Substances Control (DTSC), the Environmental Protection Agency (EPA), the US Department of Transportation (USDOT), the Occupational Safety and Health Administration (OSHA), the California Code of Regulations (CalOSHA), and the State Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The proposed residential development is not anticipated to transport, use, or dispose hazardous materials. However, the residential uses may use small amounts of commercially available hazardous materials (e.g., household cleaning chemicals, fertilizers, pesticides), but these materials would be used in compliance with applicable regulations. Project operation would not create a significant hazard to the public or environment due to the use of hazardous materials. As a single-family residential use, Project operation is not anticipated to significantly affect the existing noise levels. The Municipal Code Section 8.14.040(E) states that construction within the City shall only occur from 7AM to 7PM from Monday through Friday excluding holidays and from 8AM to 4PM on Saturdays. Construction noise is expected to occur from site preparation, grading, building construction, paving, and architectural coating. Noise generated from Project construction equipment will include a combination of trucks, power tools, concrete mixers, and other equipment that when combined, can reach high levels. However, all construction of the Property will occur during hours permitted by the City's Municipal Code and therefore, will result in a less than significant impact. **Source:** Moreno Valley General Plan, Safety Element, adopted June 15, 2021; Urban Crossroads. Eucalyptus Residential Neighborhood Construction Noise Impact Analysis, August 4, 2021. (Appendix D)
Energy Consumption	2	The proposed Project would impact energy resources during construction and operation. The construction activities for the Project will include site preparation, grading, building construction, paving, and architectural coating. The Project

		will consume energy resources during construction in three (3) general forms: 1. Petroleum-based fuels used to power off-road construction vehicles and equipment on the Project site, construction worker travel to and from the Project site, as well as delivery and haul truck trips (e.g., hauling of demolition material to off-site reuse and disposal facilities); 2. Electricity associated with the conveyance of water that will be used during Project construction for dust control (supply and conveyance) and electricity to power any necessary lighting during construction, electronic equipment, or other construction activities necessitating electrical power; and, 3. Energy used in the production of construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber. All construction equipment is subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation. This regulation, which applies to all off-road diesel vehicles 25 horsepower or greater, limits unnecessary idling to 5 minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment, and phases out Tier 1 and 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements, which will increase construction equipment fuel efficiency. These limitations on idling of vehicles and equipment, and the requirements that equipment must be properly maintained (CCR Title 13, Sections 2449(d)(3) and 2485), will result in fuel savings. Due to the temporary nature of construction, the Project would not result in wasteful, inefficient, and unnecessary consumption of energy. The residential units developed by this Project will be required to comply with the current California Building Code and the State's Title 24 energy regulations, which are the most stringent in the United States. Additionally, the proposed Project will comply with the City's adopted Cal Green Building Codes and will not conflict with relevant plans involving renewable energy and energy efficiency, such as the statewide Climate Change Scoping Plan. Therefore, Project impacts to energy resources would be less than significant. **Source:** Final Environmental Impact Report City of Moreno Valley General Plan, Energy, certified June 15, 2021; In-Use Off-Road Diesel-Fueled Fleets Regulation. California Air Resources Board, In-Use Off-Road Diesel-Fueled Fleets Regulation | California Air Resources Board

Environmental Assessment Factor	Impact Code	Impact Evaluation
SOCIOECONOMIC		
Employment and Income Patterns	1	The Project will have no adverse impact on employment and income patterns in Moreno Valley or the surrounding areas. In the short-term, the Project will benefit local employment by generating temporary construction jobs in the City. In the long-term, the Project will increase low- to moderate- income housing for the local labor force, allowing residents to live and work locally, which will facilitate the recirculation of funds within the local economy of Moreno Valley. Moreover, developing the vacant land that is currently littered with three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris will support urban renewal and encourage surrounding residential and office entities to maintain their properties at this new elevated baseline. **Source:** Moreno Valley General Plan, Housing Element, adopted June 15, 2021
Demographic Character Changes, Displacement	1	The Project site is currently vacant, and the proposed Project does not include uses or activities that will otherwise displace housing assets or persons. The Project will develop seven (7) single-family residential homes that serve low-income housing to meet the needs of the City of Moreno Valley. At seven (7) residential homes, the Project is not anticipated to induce substantial growth in population in the area. No adverse impact is expected to result from the proposed Project, as it will not create a significant change to the demographics of the area. **Source:** Moreno Valley General Plan, Housing Element, adopted June 15, 2021
Environmental Assessment Factor	**Impact Code**	**Impact Evaluation**
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	2	The proposed Project will not have an adverse impact on educational and cultural facilities because the development of seven (7) single-family residential homes will not induce significant population growth in Moreno Valley. Additionally, the proposed Project maintains the existing land use designation, which allows for residential development at a density of twenty (20) dwelling units per acre. Impacts to educational and cultural facilities were formerly analyzed and accounted for under the General Plan Environmental Impact Report, certified on June 15, 2021. With consideration that the General Plan land use designation is not changing, there are no additional effects or impacts from the proposed residential use. The Project site is located within the boundaries of the Moreno Valley Unified School District which serves kindergarten through the twelfth grades. The nearest public schools that serve the Project site are Sunnymead Middle

		School, located 0.12 miles west of the Project; Sunnymead Elementary School located 0.15 miles south of the Project; and Moreno Valley High School located 0.86 miles southwest of the Project. **Source:** Final Environmental Impact Report City of Moreno Valley General Plan, Public Services and Recreation, certified June 15, 2021
Commercial Facilities	2	The Project site is located approximately 0.4 miles southeast of a commercial center along Sunnymead Blvd. that includes a grocery store, hardware store, office supply store, restaurants, retail stores, dental and cosmetic services, and other service-oriented businesses. Additionally, the Project site is 1.6 miles southeast of the Moreno Valley Mall, which includes a variety of commercial retail and service-oriented businesses that will serve the Project site and meet the day to day needs of the residents of the proposed Project. For residents without a personal vehicle, public bus transit service conveniently runs along Heacock Street and can be accessed near the intersection of Heacock Street and Eucalyptus Avenue, an approximate 3-minute walk (0.1 miles) west of the Project site. Route 11 connects the Project site to the commercial center along Sunnymead Blvd. and the Moreno Valley Mall. **Source:** Maps & Schedules. Riverside Transit Agency, Route Info - Riverside Transit Agency
Health Care and Social Services	2	The Project is consistent with the City's General Plan land use designation, which allows for residential uses on the Project site with a permitted density of up to twenty (20) dwelling units per acre. Therefore, impacts to healthcare and social services were analyzed under the City's 2021 General Plan Environmental Impact Report. With consideration that the existing land use designation is not changing, there are no additional effects or impacts from the proposed residential development. The use of social services, (schools, hospitals, etc.) by the residents of the proposed seven (7) single-family homes, would be marginal as the proposed development will not induce significant population growth in Moreno Valley. The County hospital is approximately three (3) miles southeast of the Project site at Cactus and Nason Street. Additionally, Kaiser Hospital is approximately four (4) miles southeast of the Project site at Nason Street and Iris Avenue. Both hospitals provide emergency and inpatient medical services. Social services are provided by state, county and local non-profit agencies. These services, if required by the residents of the Project, are available within the City of Moreno Valley and Riverside County. The County of Riverside Social Services Offices are located at 23119 Cottonwood Avenue, Moreno Valley, CA.

		Development of the Project is not expected to have any significant impacts on health care or social service facilities or their ability to serve the population of the proposed Project. **Source:** Final Environmental Impact Report City of Moreno Valley General Plan, Public Services and Recreation, certified June 15, 2021
Solid Waste Disposal / Recycling	2	Locally generated solid waste is deposited in one of several Class III landfills located within Riverside County, including the Badlands Sanitary Landfill at the eastern end of Ironwood Avenue. The Badlands Sanitary Landfill is owned and operated by the Riverside County Waste Resources Management District. The proposed Project would minutely increase the volume of solid waste generated in the County. Based on the CalRecycle Residential Sector Generation Rates chart, the Project would generate approximately 85.61 pounds of solid waste per day and 7.7 cubic yards per year. The California Integrated Waste Management Act under the Public Resources Code requires that local jurisdictions divert at least 50% of all solid waste generated by January 1, 2000. The City remains committed to continuing its existing waste reduction and minimization efforts with the programs that are available throughout the City. The Project would be implemented and operated in compliance with applicable City General Plan Goals and Policies, and would conform with City Zoning regulations—specifically, the Project would comply with local, state, and federal initiatives and directives acting to reduce and divert solid waste from landfill waste streams. As described above, the Project would comply with the California Integrated Waste Management Act as implemented by the City. The proposed Project is required to comply with all applicable federal, state, County, and City statues and regulations related to solid waste as a standard project condition of approval. Therefore, no impact would occur. **Source:** Estimated Solid Waste Generation Rates. CalRecycle, 2019, Estimated Solid Waste Generation Rates (ca.gov)
Waste Water / Sanitary Sewers	2	Waste water service will be provided to the Project site by Eastern Municipal Water District (EMWD). EMWD is required to operate all treatment facilities in accordance with the waste treatment and discharge standards and requirements set forth by the Santa Ana Regional Water Quality Control Board (RWQCB). Waste water generated by the Project would be collected and conveyed to the Moreno Valley Regional Water Reclamation Facility (MVRWRF). On average, this facility treats 11.5 million gallons of wastewater per day. The MVRWRF has a current capacity to treat 16 million gallons per day with an ultimate capacity to treat 18 million gallons per day. The Project would pay applicable sewer connection and service fees, providing funds available for EMWD waste water system expansion and maintenance, acting to offset the Project's incremental demands for waste water collection and

		treatment services. Given that the Project proposes a low-density land use, waste water from the proposed Project is not anticipated to exceed the capacity to the waste water treatment provider, even when considering existing and cumulative demand. The Project does not propose to install any septic tanks or alternative waste water disposal systems. Therefore, the Project would have no potential to exceed applicable wastewater treatment requirements established by the RWQCB. **Source:** Moreno Valley General Plan, Parks & Public Services Element, adopted June 15, 2021; Moreno Valley Regional Water Reclamation Facility. Eastern Municipal Water District , Newsletter 4 (emwd.org)
Water Supply	2	The City of Moreno Valley is served by two water purveyors: Eastern Municipal Water District (EMWD) and the Box Springs Mutual Water Company. EMWD is the primary water purveyor for the City and would provide water service to the Project. Water demands of the Project are consistent with the EMWD 2020 Urban Water Management Plan (UWMP). The proposed Project involves the construction of seven (7) single-family residential homes, which is consistent with the Village Specific Plan (SP 204) and the City's General Plan. EMWD's supply portfolio has a high degree of reliability. The local groundwater basins are managed to protect them from overdraft, and EMWD participates in programs to bank water in the groundwater basins in wet years so that it can be used in dry years. EMWD's imported water is provided by the Metropolitan Water District of Southern California, which has made extensive investments in programs to increase the reliability of its supply. In its 2020 UWMP, Metropolitan has shown the ability to continue to meet demands through 2045, even during an extended drought. EMWD would benefit from Metropolitan's storage and supply programs and also expects that it can meet demands through 2045 during normal and dry conditions. **Source:** Eastern Municipal Water District Urban Water Management Plan. Eastern Municipal Water District, July 1, 2021, EMWD UWMP.docx
Public Safety - Police, Fire and Emergency Medical	2	**Police** Police protection services to the Project site are provided by the Moreno Valley Police Department. The Project site is served by the Moreno Valley Police Station, located at 22850 Calle San Juan De Los Lagos, approximately 1.7 miles southwest of the Project site. The proposed Project will not result in a substantial increase in the population or housing supply, nor is it expected to significantly affect the existing service capacity of the Moreno Valley Police Department. The Project is not anticipated to require or result in the construction of new or physically altered police facilities. Impacts to police protection service capacity and facilities would therefore be less than significant.

		Fire Fire protection services to the Project site are provided by the Moreno Valley Fire Department (MVFD). The Project site is served by the Sunnymead Fire Station (Station No. 2), located at 24935 Hemlock Avenue, approximately one (1) mile to the northeast of the Project site. Additional services in the vicinity are the Towngate Fire Station, located 1.8 miles northwest of the Project and the Morrison Park Fire Station, located 2.4 miles southeast of the Project site (City of Moreno Valley, 2021). Thus, the Project would be adequately served by fire protection services, and no new or expanded unplanned facilities would be required. Impacts to fire protection facilities would be less than significant. The Project is required to comply with the provisions of the City of Moreno Valley's Development Impact Fee (DIF) Ordinance (Ordinance No. 695), which requires a fee payment that the City applies to the funding of public facilities, including fire protection facilities. Mandatory compliance with the DIF Ordinance would be required prior to the issuance of a building permit. The Project also would feature a minimum of fire safety and fire suppression activities, including type of building construction, fire sprinklers, a fire hydrant system, and paved access. **Emergency Medical** The Project is not anticipated to induce substantial growth in population in the area and therefore would not increase demand for emergency medical services. The County hospital is approximately three (3) miles southeast of the Project site at Cactus and Nason Street. Additionally, Kaiser Hospital is approximately four (4) miles southeast of the Project site at Nason Street and Iris Avenue. Both hospitals provide emergency and inpatient medical services. **Source:** Final Environmental Impact Report City of Moreno Valley General Plan, Public Services and Recreation, certified June 15, 2021
Parks, Open Space and Recreation	2	Development of future housing, as anticipated by the proposed Project, would be subject to compliance with Municipal Code Chapter 3.40, Dedication of Land for Park Facilities and Payment of In-Lieu Fees, which requires as a condition of approval of a final subdivision map, parcel map, building permit or occupancy permit, dedication of land, payment of a fee in-lieu thereof, or a combination of both, at the option of the City, for neighborhood and community park or recreational purposes. Future residential development would also be required to comply with Municipal Code Section 3.38.090, Community/recreation center residential development impact fees, which requires any new residential dwelling unit to pay a fee for the purpose of acquiring, designing, constructing, improving, providing and maintaining recreation/community center facilities provided for in the City's General Plan and its adopted Capital Improvement Program or an adopted Master Plan of Parks and Recreation

		Facilities. Dedication of land or payment of in-lieu fees and payment of the community/recreation center development impact fee would reduce potential impacts to a less than significant level. Additionally, compliance with General Plan policies would assist in providing parkland and recreational facilities, further reducing potential impacts. Sunnymead Park, March Mountain High School Gymnasium (joint use facility), and Moreno Valley High School Swimming Pool (joint use facility) are all located within one (1) mile of the Project site. Additionally, Lake Perris State Recreation Area is approximately six (6) miles southeast of the Project site, offering camping, hiking, bike trails, boating and fishing. **Source:** Final Environmental Impact Report City of Moreno Valley General Plan, Public Services and Recreation, certified June 15, 2021
Transportation and Accessibility	2	The Project includes the construction of Street A which is proposed as a Modified Local Street (50' right-of-way) and will provide access to the seven (7) single-family residential lots. Street A will connect to the north side of Eucalyptus Avenue. Eucalyptus Avenue is maintained by the City and is classified by the General Plan Circulation Element as an Arterial Street running east/west. Arterial streets carry the majority of traffic traveling through the City and provide access to freeways as well as major activity centers and residential areas. The Riverside Transit Authority will provide bus service to Project residents. Adequate on-site and off-street parking will be provided in the form of two-car garages for each unit, as well as individual driveways. Due to the small size of the Project and its location near an arterial roadway, Project implementation will not result in traffic generation above that of planned system capacity. Increased traffic flow from the Project has already been incorporated into the 2021 General Plan Circulation Element. Although Project construction may cause increased traffic within the immediate surroundings, construction impacts will be short-term. Additionally, the anticipated congestion can be adequately addressed through effective construction staging and management. **Source:** Final Environmental Impact Report City of Moreno Valley General Plan, Transportation, certified June 15, 2021
Environmental Assessment Factor	**Impact Code**	
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	**Unique Natural Features** The Project site and immediate vicinity do not contain any natural features or agricultural lands. According to the State Farmland Mapping and Monitoring Program, the Project site is identified as Urban and Built-Up Land. Therefore, the site is not within an area capable of supporting significant farmland. Not only is the site surrounded by single-family residential, multi-family residential, and office uses, but the vacant land

		has also been cleared and contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris. Therefore, no impact on unique natural features would result from the implementation of this proposed Project. **Water Resources** Surface water resources in and near Moreno Valley include Lake Perris, Mystic Lake, and several small reservoirs and creeks throughout the City. Lake Perris is located over five (5) miles southeast of the Project site. Water resources in the City and throughout Riverside County are sustained by substantial groundwater basins, which are used as reservoirs to store water during wet years. These underground reservoirs are tapped throughout the year according to the demand for water. While groundwater no longer provides a significant percentage of the local water supply for Moreno Valley, it is still an important natural resource for the area that should be protected. California's groundwater is regulated under the 2014 Sustainable Groundwater Management Act (SGMA), which requires Groundwater Sustainability Plans to be adopted for medium or high-priority basins. Moreno Valley's groundwater falls within the West San Jacinto Groundwater Management Area, along with most of the groundwater in western Riverside County. The San Jacinto Groundwater Basin is deemed a high priority basin but is not currently critically over drafted. The City is governed by the Santa Ana Regional Water Board (SAWQB) for implementation of the federal Clean Water Act in California. Therefore, the Project is required to conform with SAWQB regulations relating to stormwater runoff and discharge. Therefore, adverse Project related impacts to water resources are not anticipated. **Source:** California Department of Conservation. California Important Farmland Finder GIS Application, California Important Farmland Finder; Moreno Valley General Plan, Open Space and Resource Conservation, adopted June 15, 2021
Vegetation, Wildlife	2	Although the proposed Project is located within the Western Riverside County Multiple Species Habitat Conservation Plan (WR-MSHCP) planning area, the site is not located within an MSHCP Criteria Cell. The Project site is not located within any endangered plant or animal survey areas. Additionally, per the site visit completed on July 29, 2021, the Project site had been cleared of structures and vegetation with a few resprouted ornamental plants. Therefore, there are no known significant vegetative or wildlife resources on the site. **Source:** Riverside Conservation Authority, MSHCP Information Map, RCA MSHCP Information Map (arcgis.com)
Other Factors	2	None

Additional Studies Performed:

Air Quality & Greenhouse Gas Assessment:

- Urban Crossroads, Inc., August 19, 2022 (Appendix A)

Phase I Cultural Resources Assessment:

- Duke Cultural Resources Management, LLC, August 2022 (Appendix B)

Construction Noise Impact Analysis:

- Urban Crossroads, Inc., August 4, 2021 (Appendix D)

Preliminary Geotechnical Investigation:

- LOR Geotechnical Group, Inc., June 27, 2022 (Appendix E)

Field Inspection (Date and Completed By):

Morgan Bender, M.A., RPA., Duke Cultural Resources Management, LLC
July 29, 2021

LOR Geotechnical Group, Inc.
July 15, 2021

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]:

Sources:

1. City of Moreno Valley General Plan, adopted June 15, 2021.
2. City of Moreno Valley, California Municipal Code -Title 9 Planning and Zoning.
3. March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan. Airport Land Use Commission, Draft (rcaluc.org)
4. United States Government. The Coastal Barrier Resources Act of the United States. Enacted October 18, 1982. CBRA, Public Law 97-348.
5. Federal Emergency Management Agency. FEMA Flood Map No. 06065C0761G. USGS The National Map October 2020, FEMA Flood Map Service Center
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7. 2022 Air Quality Management Plan (AQMP). South Coast Air Quality Management District, South Coast AQMD Air Quality Management Plan
8. Maps of State and Federal Area Designations. California Air Resources Board, Maps of State and Federal Area Designations | California Air Resources Board
9. California Coastal Commission. Local Coastal Program Areas Map, Local Coastal Program Areas
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11. California State Water Resources Control Board, GeoTracker Database, GeoTracker (ca.gov)
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13. Riverside Conservation Authority, MSHCP Information Map, RCA MSHCP Information Map (arcgis.com)

14. CalEPA Regulated Site Portal. CalEPA, CalEPA Regulated Site Portal
15. California Department of Conservation. California Important Farmland Finder GIS Application, California Important Farmland Finder
16. Moreno Valley Local Hazard Mitigation Plan, October 4, 2011, revised May 2017, Moreno Valley LHMP (moval.org)
17. United States Environmental Protection Agency. Sole Source Aquifers GIS Application, Sole Source Aquifers (arcgis.com)
18. U.S. Fish and Wildlife Service. National Wetlands Inventory Surface Waters and Wetlands Viewer, National Wetlands Inventory (usgs.gov)
19. National Park Service. Eastern Municipal Water District, July 1, 2021, Wild & Scenic Rivers (arcgis.com)
20. Master Drainage Plan Maps. Riverside County Flood Control, content.rcflood.org/MDPADP/
21. In-Use Off-Road Diesel-Fueled Fleets Regulation. California Air Resources Board, In-Use Off-Road Diesel-Fueled Fleets Regulation | California Air Resources Board
22. Moreno Valley Regional Water Reclamation Facility. Eastern Municipal Water District , Newsletter 4 (emwd.org)
23. Estimated Solid Waste Generation Rates. CalRecycle, 2019, Estimated Solid Waste Generation Rates (ca.gov)
24. Eastern Municipal Water District Urban Water Management Plan. Eastern Municipal Water District, July 1, 2021, EMWD UWMP.docx
25. Urban Crossroads. Eucalyptus Residential Neighborhood Air Quality & Greenhouse Gas Memorandum, August 19, 2022. (Appendix A)
26. Duke Cultural Resources Management, LLC. Phase I Cultural Resources Assessment, August 2022. (Appendix B)
27. Eucalyptus HUD Project Letter, Agua Caliente Band of Cahuilla Indians. February 2, 2023. (Appendix C)
28. Urban Crossroads. Eucalyptus Residential Neighborhood Construction Noise Impact Analysis, August 4, 2021. (Appendix D)
29. LOR Geotechnical Group, Inc. Preliminary Geotechnical Investigation, June 27, 2022. (Appendix E)

Agencies:

- City of Moreno Valley
- County of Riverside
- Airport Land Use Commission (ALUC)
- Federal Emergency Management Agency (FEMA)
- South Coast Air Quality Management District (SCAQMD)
- California Air Resources Board (CARB)
- California Coastal Commission
- California State Water Resources Control Board
- United States Environmental Protection Agency (USEPA)
- California Environmental Protection Agency (CalEPA)
- Riverside Conservation Authority (RCA)
- California Department of Conservation
- County of Riverside Social Services
- Eastern Municipal Water District (EMWD)

List of Permits to be Obtained:

- Plot Plan

Public Outreach [24 CFR 50.23 & 58.43]:

The NEPA Environmental Assessment with anticipated FONSI, and all documents incorporated and/or referenced therein, can be reviewed during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday and Friday, 7:30 a.m. to 4:30 p.m.) at the City of Moreno Valley Planning Division counter, located at 14177 Frederick Street, Moreno Valley, CA 92553. The documents may also be reviewed on the City's website at MV CDD Current Projects (moreno-valley.ca.us)

Cumulative Impact Analysis [24 CFR 58.32]:

Cumulative impacts can be caused by the interaction of environmental changes resulting from one proposed Project with changes resulting from other past, present, and future projects that affect the same resources, utilities and infrastructure systems, public systems, transportation network elements, air basin, watershed, or other physical conditions. Such impacts can be short-term and temporary, usually consisting of overlapping construction impacts, as well as long-term, due to the permanent land use changes and operational characteristics involved with the proposed Project.

The City of Moreno Valley has evaluated cumulative development impacts as part of the preparation of the General Plan and has accounted for incremental cumulative impacts related to development at the Project site and adjacent sites within the City. As a result of those separate evaluations, the City has outlined a series of standard development guidelines and plans that all development projects must implement as part of securing separate building and site development permits within the City. Those standard development guidelines and plans will be required for the development activities of the proposed Project.

The proposed Project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. Based upon the Phase I Cultural Assessment prepared by Duke Cultural Resources Management, LLC, there are no historic structures on the site, and there will be no impact to historic resources. The Project will not eliminate important examples of the major periods of California history or prehistory. Furthermore, this Project will not create any impacts, that when viewed in connection with existing land uses, other recently approved projects, and existing land use designations, would be considered cumulatively considerable. It is not expected that the proposed Project would result in incremental effects. The analysis in this Environmental Assessment demonstrates that Project and cumulative impacts would be less than significant. The Project as designed and conditioned would not cause substantial adverse health effects on human beings.

Alternatives [24 CFR 58.40(e); 40 CFR 1508.9]:

1. Sale of Site
The property could be sold to another developer entity. Based on current housing and the rental market, it can be reasonably assumed that the property would become market rate housing. This type of development would deter the long-term objective of the City's Housing Element to encourage a mix of housing types and rental rates (i.e., affordable).

2. Different Project Location

The stated purpose and need of the Project are to provide low-income housing for residents in Moreno Valley earning below 80% of the Area Median Income, who do not have the financial means to qualify for conventional market rate home loans. The dearth of affordable housing in the City, as documented in the RHNA, demonstrates the need for the Project. The Project site has been identified by the 2008, 2014, and 2021 Moreno Valley Hosing Element, with the explicit purpose of addressing low-income housing. Other alternatives would require identifying and purchasing a market-rate property, which would be costly and potentially difficult to identify a qualifying site. The current site is centrally located near schools, public transit, grocery stores, and other public services. Another alternative may not provide the central location, have the same level of access to public services and amenities, or be as walkable as the current site.

No Action Alternative [24 CFR 58.40(e)]:

The No Action Alternative would not construct any residential units on the currently vacant Project site that contains three (3) slab foundations within poured footings, a concrete chunk debris pile, and a high volume of modern debris scattered throughout the site. Under this alternative, there would be no single-family low-income housing developed on the site, and the City would continue to require single-family and affordable housing development to comply with state and federal mandates. The selection of the No Action Alternative would not meet the stated Purpose and Need, to provide low-income housing for residents in the City earning below 80% of the Area Median Income, who do not have the financial means to qualify for conventional market rate home loans. Furthermore, the Project site would remain vacant and unkept with debris that will continue to scatter throughout the site and adjacent properties due to the natural elements such as rain, wind, and animals.

Summary of Findings and Conclusions:

It has been determined that the Project will result in a Finding of No Significant Impact and that there are no impacts to any of the resource areas evaluated in this Environmental Assessment. Rather the Project will have a positive impact on the quality of the human environment, by providing low- to moderate-income housing to the most vulnerable populations earning below 80% of the Area Median Income, first time buyers, with a preference for U.S. Veterans. The proposed Project will provide safe, sanitary, and affordable housing for residents, which will subsequently facilitate the recirculation of funds within the local economy of Moreno Valley.

The Project site is zoned R20/Village Residential (R20 – SP 204 VR) which allows for residential development with a range of densities from small, to single-family lots with detached homes to attached multi-family complexes. The City of Moreno Valley's long-range planning documents (including the General Plan and its multiple elements) have allowed the Project site for residential use without additional entitlements. The City of Moreno Valley is in the process of issuing a CEQA Categorical Exemption (CE) for the Project, which will assist the City in meeting its state and federal obligations for housing. There are no formal mitigation measures for this Project as the Project has a Finding of No Significant Impact. Environmental impacts resulting from the Project will be avoided pursuant to the provisions of the General Plan. Standard project Best Management Practices, as well as the recommendations provided in this document, will be incorporated into the Project as Conditions of Approval to protect unknown resources that might be discovered during construction.

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarized below are all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

CUL-1 Archaeological Sensitivity Training	Prior to disturbance, either demolition or excavation, a qualified archaeologist should present to field staff, cultural resources sensitivity training. The archaeologist shall summarize the types of resources that may be present subsurface, as well as protocols in the event inadvertent cultural resource finds are discovered (see CUL-2).
CUL-2 Inadvertent Finds Procedures	If intact subsurface cultural resources are encountered during earth moving, work should halt with fifty (50) feet of the find until such time as a qualified archaeologist can be retained to assess the find. The archaeologist may recommend that these cultural resources undergo evaluation to determine NRHP- and CRHR-eligibility with a focus of Criterion D/4 regarding data potential. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, a cemetery is place where six or more human bodies are buried (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052).

Determination:

☒ **Finding of No Significant Impact [24 CFR 58.40(g)(1); 40 CFR 1508.27]**
The project will not result in a significant impact on the quality of the human environment.

☐ **Finding of Significant Impact [24 CFR 58.40(g)(2); 40 CFR 1508.27]**
The project may significantly affect the quality of the human environment.

Preparer Signature: _____ **Date:** 2/15/23

Name/Title/Agency: Frank Coyle, Director of Planning, CASC Engineering and Consulting, Inc.

Certifying Officer Signature: _____ **Date:** 2/15/2023

Name/Title/Agency: Sean Kelleher, Planning Official, City of Moreno Valley

The original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD programs(s).

APPENDIX A
Eucalyptus Residential Neighborhood Air Quality & Greenhouse Gas Memorandum

February 2023

August 19, 2022

Mr. Frank Coyle
CASC Engineering & Consulting
1470 E. Cooley Drive
Colton, CA 92324

EUCALYPTUS RESIDENTIAL NEIGHBORHOOD AIR QUALITY & GREENHOUSE GAS MEMORANDUM

Urban Crossroads, Inc. is pleased to provide the following Air Quality & Greenhouse Gas Memorandum (referred to as Memo) for Eucalyptus Residential Neighborhood development which is located north of Eucalyptus Avenue and east of Heacock Street in the City of Moreno Valley.

The Project is proposing to develop 7 affordable housing dwelling units on a 1.4-acre parcel as shown on Exhibit 1.

EXHIBIT 1: PROJECT SITE BOUNDARY

BACKGROUND

In May 2022, the California Air Pollution Control Officers Association (CAPCOA) in conjunction with other California air districts, including SCAQMD, released the latest version of the CalEEMod Version 2022. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (VOCs, NO_X, SO_X, CO, PM_{10}, and $PM_{2.5}$) and GHG emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from MMs.

The purpose of this work effort is to demonstrate if the proposed Project is anticipated to generate air quality or greenhouse gas emissions that could exceed applicable thresholds for construction and operational activity.

PROJECT AIR QUALITY EMISSIONS SUMMARY

REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Construction emissions were modeled in CalEEMod 2022 utilizing CalEEMod defaults for phasing, and equipment assumptions. As shown in Table 1, the Proposed Project would not result in an exceedance of the SCAQMD regional significance threshold for construction source emissions.

TABLE 1: PROPOSED PROJECT CONSTRUCTION EMISSIONS SUMMARY

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	1.97	19.4	17.5	0.02	2.91	1.78
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

LOCALIZED CONSTRUCTION EMISSIONS

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs).

Emissions during peak construction activity will not exceed the SCAQMD's localized significance thresholds as illustrated on Table 2. As such, the Project's localized impacts during construction activity would be less than significant. Outputs from the model runs for construction are provided in Attachment A.

TABLE 2: PROJECT LOCALIZED CONSTRUCTION IMPACTS

On-Site Emissions	Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	19.4	17.5	2.91	1.78
SCAQMD Localized Threshold	118	602	4	3
Threshold Exceeded?	NO	NO	NO	NO

REGIONAL OPERATIONAL EMISSIONS

Operational activities associated with the Project would result in emissions of CO, VOCs, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Operational related emissions are expected from the following primary sources: area source emissions, energy source emissions, and mobile source emissions.

The estimated operation-source emissions from the Project are summarized on Table 2. Detailed operation model outputs are presented in Attachment A. As shown on Table 2, operational-source emissions would not exceed the applicable SCAQMD regional thresholds for emissions of any criteria pollutant.

TABLE 4: TOTAL PROJECT REGIONAL OPERATIONAL EMISSIONS

Source	Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Total Maximum Daily Emissions	0.76	0.89	0.38	4.48	0.41	0.27
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

PROJECT GREENHOUSE GAS EMISSIONS SUMMARY

CONSTRUCTION GHG EMISSIONS SUMMARY

Greenhouse gas emissions resulting from construction and operations of the Proposed Project were also modeled using CalEEMod 2022. For construction phase Project emissions, GHGs are quantified and amortized over the life of the Project. The amortized construction emissions are presented in Table 3 and added to the total operational emissions. As shown on Table 3, the Project would not exceed applicable GHG thresholds and a less than significnat impact would occur.

TABLE 3 PROPOSED PROJECT CONSTRUCTION GHG EMISSIONS SUMMARY

Year	Emissions (MT/yr) Total CO_2E
Amortized Construction Emissions	6.08
Operational Emission	108
Total Emissions (MTCO2e)	114.08
Threshold	3,000
Threshold Exceeded?	NO

SUMMARY OF FINDINGS

Results of the assessment indicate that the Project is not anticipated to result in a significant impact during construction or operational activities associated with air quality and greenhouse gas emissions.

If you have any questions, please contact me directly at hqureshi@urbanxroads.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

Haseeb Qureshi
Principal

ATTACHMENT A
CALEEMOD MODEL OUTPUTS

Eucalyptus Affordable Housing Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Eucalyptus Affordable Housing
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	24.0
Location	Moreno Valley, CA, USA
County	Riverside-South Coast
City	Moreno Valley
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5594
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	7.00	Dwelling Unit	1.40	15,481	81,990	0.00	23.0	Affordable Housing

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.45	9.84	9.85	10.4	0.02	0.41	0.16	0.45	0.38	0.04	0.39	—	1,862	1,862	0.08	0.02	0.79	1,869
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.35	1.97	19.4	17.5	0.02	0.93	1.97	2.91	0.86	0.92	1.78	—	2,589	2,589	0.11	0.02	0.02	2,599
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.67	0.82	4.54	4.84	0.01	0.19	0.04	0.21	0.17	0.02	0.18	—	862	862	0.03	0.01	0.05	865
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.15	0.83	0.88	< 0.005	0.03	0.01	0.04	0.03	< 0.005	0.03	—	143	143	0.01	< 0.005	0.01	143

2.2. Construction Emissions by Year, Unmitigated

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

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

2023	1.45	9.84	9.85	10.4	0.02	0.41	0.16	0.45	0.38	0.04	0.39	—	1,862	1,862	0.08	0.02	0.79	1,869
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	2.35	1.97	19.4	17.5	0.02	0.93	1.97	2.91	0.86	0.92	1.78	—	2,589	2,589	0.11	0.02	0.02	2,599
2023	1.45	1.21	9.85	10.4	0.02	0.41	0.04	0.45	0.38	0.01	0.39	—	1,859	1,859	0.08	0.02	0.01	1,866
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.20	0.17	1.43	1.41	< 0.005	0.07	0.04	0.10	0.06	0.02	0.08	—	237	237	0.01	< 0.005	0.02	238
2023	0.67	0.82	4.54	4.84	0.01	0.19	0.02	0.21	0.17	0.01	0.18	—	862	862	0.03	0.01	0.05	865
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.04	0.03	0.26	0.26	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	39.2	39.2	< 0.005	< 0.005	< 0.005	39.4
2023	0.12	0.15	0.83	0.88	< 0.005	0.03	< 0.005	0.04	0.03	< 0.005	0.03	—	143	143	0.01	< 0.005	0.01	143

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.76	0.89	0.36	4.48	0.01	0.25	0.16	0.41	0.24	0.03	0.27	42.9	696	739	0.40	0.03	2.33	759
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.70	0.83	0.38	3.73	0.01	0.25	0.16	0.41	0.24	0.03	0.27	42.9	663	706	0.40	0.03	0.17	724
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	0.69	0.35	2.56	0.01	0.03	0.16	0.18	0.03	0.03	0.05	4.44	633	638	0.21	0.03	1.05	652
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.07	0.13	0.06	0.47	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.74	105	106	0.04	< 0.005	0.17	108

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.33	0.31	0.27	2.34	0.01	< 0.005	0.16	0.16	< 0.005	0.03	0.03	—	516	516	0.02	0.02	2.22	526
Area	0.42	0.58	0.03	2.11	0.01	0.25	—	0.25	0.24	—	0.24	41.3	27.5	68.8	0.20	< 0.005	—	73.8
Energy	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	142	142	0.01	< 0.005	—	143
Water	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Waste	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	0.76	0.89	0.36	4.48	0.01	0.25	0.16	0.41	0.24	0.03	0.27	42.9	696	739	0.40	0.03	2.33	759
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.28	0.28	1.99	< 0.005	< 0.005	0.16	0.16	< 0.005	0.03	0.03	—	485	485	0.03	0.02	0.06	493
Area	0.38	0.55	0.03	1.72	0.01	0.24	—	0.24	0.24	—	0.24	41.3	26.4	67.8	0.20	< 0.005	—	72.7
Energy	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	142	142	0.01	< 0.005	—	143
Water	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Waste	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	0.70	0.83	0.38	3.73	0.01	0.25	0.16	0.41	0.24	0.03	0.27	42.9	663	706	0.40	0.03	0.17	724
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.30	0.27	0.28	2.02	< 0.005	< 0.005	0.16	0.16	< 0.005	0.03	0.03	—	478	478	0.02	0.02	0.94	487
Area	0.07	0.41	0.01	0.51	< 0.005	0.02	—	0.02	0.02	—	0.02	2.83	2.87	5.70	0.01	< 0.005	—	6.05

Energy	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	142	142	0.01	< 0.005	—	143
Water	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Waste	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	0.37	0.69	0.35	2.56	0.01	0.03	0.16	0.18	0.03	0.03	0.05	4.44	633	638	0.21	0.03	1.05	652
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.05	0.05	0.37	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	79.2	79.2	< 0.005	< 0.005	0.15	80.6
Area	0.01	0.07	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.47	0.48	0.94	< 0.005	< 0.005	—	1.00
Energy	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Water	—	—	—	—	—	—	—	—	—	—	—	0.09	1.64	1.73	0.01	< 0.005	—	2.04
Waste	—	—	—	—	—	—	—	—	—	—	—	0.18	0.00	0.18	0.02	0.00	—	0.62
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.07	0.13	0.06	0.47	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	0.74	105	106	0.04	< 0.005	0.17	108

3. Construction Emissions Details

3.1. Site Preparation (2022) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.98	1.67	16.8	14.1	0.02	0.81	—	0.81	0.74	—	0.74	—	2,062	2,062	0.08	0.02	—	2,069

Dust From Material Movemen:	—	—	—	—	—	—	1.63	1.63	—	0.78	0.78	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Dust From Material Movemen:	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.87	1.87	< 0.005	< 0.005	—	1.88
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.05	0.56	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	103	103	< 0.005	< 0.005	0.01	104
Vendor	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	0.00
Hauling	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.58
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
Vendor	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	0.00
Hauling	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	0.00

3.3. Grading (2022) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.28	1.92	19.4	16.7	0.02	0.93	—	0.93	0.86	—	0.86	—	2,452	2,452	0.10	0.02	—	2,460
Dust From Material Movemen:	—	—	—	—	—	—	1.84	1.84	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.9	26.9	< 0.005	< 0.005	—	27.0

Dust From Material Movemen:	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.45	4.45	< 0.005	< 0.005	—	4.46
Dust From Material Movemen:	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.07	0.74	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	138	138	0.01	< 0.005	0.02	139
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	1.53	1.53	< 0.005	< 0.005	< 0.005	1.55
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.26
Vendor	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	0.00

Hauling	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	0.00

3.5. Building Construction (2022) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.30	10.6	10.5	0.02	0.48	—	0.48	0.44	—	0.44	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.12	1.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	190	190	0.01	< 0.005	—	191
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.5	31.5	< 0.005	< 0.005	—	31.6
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.19	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	34.7	34.7	< 0.005	< 0.005	< 0.005	35.1
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	23.7	23.7	< 0.005	< 0.005	< 0.005	24.8
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	3.71	3.71	< 0.005	< 0.005	0.01	3.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.50	2.50	< 0.005	< 0.005	< 0.005	2.62
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	< 0.005	0.43
Hauling	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	0.00

3.7. Building Construction (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.43	1.19	9.81	10.2	0.02	0.41	—	0.41	0.38	—	0.38	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.43	1.19	9.81	10.2	0.02	0.41	—	0.41	0.38	—	0.38	—	1,801	1,801	0.07	0.01	—	1,807
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	0.53	4.36	4.52	0.01	0.18	—	0.18	0.17	—	0.17	—	800	800	0.03	0.01	—	803
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.80	0.83	< 0.005	0.03	—	0.03	0.03	—	0.03	—	132	132	0.01	< 0.005	—	133
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	37.0	37.0	< 0.005	< 0.005	0.16	37.6
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	23.5	23.5	< 0.005	< 0.005	0.07	24.6
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.17	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	34.0	34.0	< 0.005	< 0.005	< 0.005	34.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	23.5	23.5	< 0.005	< 0.005	< 0.005	24.6
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	15.3	15.3	< 0.005	< 0.005	0.03	15.5
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.01	10.9

Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.53	2.53	< 0.005	< 0.005	0.01	2.57
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.73	1.73	< 0.005	< 0.005	< 0.005	1.81
Hauling	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	0.00

3.9. Paving (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	5.09	6.53	0.01	0.25	—	0.25	0.23	—	0.23	—	992	992	0.04	0.01	—	995
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	27.2	27.2	< 0.005	< 0.005	—	27.3
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.50	4.50	< 0.005	< 0.005	—	4.51

Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	1.13	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	184	184	0.01	0.01	0.79	186
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	4.68	4.68	< 0.005	< 0.005	0.01	4.75
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.79
Vendor	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	0.00
Hauling	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	0.00

3.11. Architectural Coating (2023) - Unmitigated

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

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

Off-Road Equipment	0.18	0.15	0.93	1.15	< 0.005	0.04	—	0.04	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	9.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	—	0.27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	7.40	7.40	< 0.005	< 0.005	0.03	7.52
Vendor	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	0.00
Hauling	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	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.33	0.31	0.27	2.34	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	516	516	0.02	0.02	2.22	526
Total	0.33	0.31	0.27	2.34	0.01	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	516	516	0.02	0.02	2.22	526
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.31	0.28	0.28	1.99	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	485	485	0.03	0.02	0.06	493
Total	0.31	0.28	0.28	1.99	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	485	485	0.03	0.02	0.06	493
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.05	0.05	0.05	0.37	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	79.2	79.2	< 0.005	< 0.005	0.15	80.6
Total	0.05	0.05	0.05	0.37	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	79.2	79.2	< 0.005	< 0.005	0.15	80.6

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	62.4	62.4	0.01	< 0.005	—	62.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	62.4	62.4	0.01	< 0.005	—	62.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	62.4	62.4	0.01	< 0.005	—	62.8
Total	—	—	—	—	—	—	—	—	—	—	—	—	62.4	62.4	0.01	< 0.005	—	62.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3	< 0.005	< 0.005	—	10.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3	< 0.005	< 0.005	—	10.4

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.8	79.8	0.01	< 0.005	—	80.0
Total	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.8	79.8	0.01	< 0.005	—	80.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.8	79.8	0.01	< 0.005	—	80.0
Total	0.01	< 0.005	0.06	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.8	79.8	0.01	< 0.005	—	80.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.2	13.2	< 0.005	< 0.005	—	13.2
Total	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.2	13.2	< 0.005	< 0.005	—	13.2

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	9.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.38	0.19	0.03	1.72	0.01	0.24	—	0.24	0.24	—	0.24	41.3	26.4	67.8	0.20	< 0.005	—	72.7
Consumer Products	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.04	< 0.005	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.06	1.06	< 0.005	< 0.005	—	1.07
Total	0.42	10.3	0.03	2.11	0.01	0.25	—	0.25	0.24	—	0.24	41.3	27.5	68.8	0.20	< 0.005	—	73.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.38	0.19	0.03	1.72	0.01	0.24	—	0.24	0.24	—	0.24	41.3	26.4	67.8	0.20	< 0.005	—	72.7
Consumer Products	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.38	0.55	0.03	1.72	0.01	0.24	—	0.24	0.24	—	0.24	41.3	26.4	67.8	0.20	< 0.005	—	72.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.47	0.30	0.77	< 0.005	< 0.005	—	0.82

Consumer	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Total	0.01	0.12	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.47	0.48	0.94	< 0.005	< 0.005	—	1.00

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Total	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Total	—	—	—	—	—	—	—	—	—	—	—	0.55	9.91	10.5	0.06	< 0.005	—	12.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.09	1.64	1.73	0.01	< 0.005	—	2.04
Total	—	—	—	—	—	—	—	—	—	—	—	0.09	1.64	1.73	0.01	< 0.005	—	2.04

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Total	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Total	—	—	—	—	—	—	—	—	—	—	—	1.07	0.00	1.07	0.11	0.00	—	3.74
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.18	0.00	0.18	0.02	0.00	—	0.62
Total	—	—	—	—	—	—	—	—	—	—	—	0.18	0.00	0.18	0.02	0.00	—	0.62

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.11	0.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	10/30/2022	11/1/2022	5.00	2.00	—
Grading	Grading	11/2/2022	11/7/2022	5.00	4.00	—

Building Construction	Building Construction	11/8/2022	8/15/2023	5.00	200	—
Paving	Paving	8/16/2023	8/30/2023	5.00	10.0	—
Architectural Coating	Architectural Coating	8/31/2023	9/14/2023	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	7.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Cranes	Diesel	Average	1.00	6.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	2.52	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.75	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	12.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	0.50	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	31,349	10,450	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	1.88	0.00	—
Grading	—	—	4.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.08

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.08	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2022	0.00	532	0.03	< 0.005
2023	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	66.1	66.8	59.9	23,831	572	578	518	206,161

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0

Electric Fireplaces	7
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
31349.024999999998	10,450	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	365

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	65,375	349	0.0330	0.0040	248,950

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	284,716	1,588,901

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	1.98	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	26.9	annual days of extreme heat
Extreme Precipitation	2.90	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	18.5	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	98.7

AQ-PM	60.6
AQ-DPM	86.2
Drinking Water	10.2
Lead Risk Housing	49.5
Pesticides	0.00
Toxic Releases	59.1
Traffic	60.2
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	0.00
Haz Waste Facilities/Generators	53.5
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	55.7
Cardio-vascular	70.2
Low Birth Weights	37.2
Socioeconomic Factor Indicators	—
Education	78.6
Housing	83.9
Linguistic	60.6
Poverty	80.8
Unemployment	82.7

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract

Economic	—
Above Poverty	8.892595919
Employed	15.11612986
Education	—
Bachelor's or higher	6.659822918
High school enrollment	100
Preschool enrollment	49.55729501
Transportation	—
Auto Access	49.51879892
Active commuting	57.6799692
Social	—
2-parent households	16.66880534
Voting	4.683690491
Neighborhood	—
Alcohol availability	31.19466188
Park access	16.48915694
Retail density	26.22866675
Supermarket access	94.25125112
Tree canopy	3.58013602
Housing	—
Homeownership	45.34838958
Housing habitability	19.74849224
Low-inc homeowner severe housing cost burden	5.3124599
Low-inc renter severe housing cost burden	20.28743744
Uncrowded housing	20.37726165
Health Outcomes	—
Insured adults	11.15103298

Arthritis	27.4
Asthma ER Admissions	31.4
High Blood Pressure	18.2
Cancer (excluding skin)	66.1
Asthma	9.8
Coronary Heart Disease	37.1
Chronic Obstructive Pulmonary Disease	15.6
Diagnosed Diabetes	22.3
Life Expectancy at Birth	4.6
Cognitively Disabled	38.1
Physically Disabled	20.3
Heart Attack ER Admissions	27.8
Mental Health Not Good	13.8
Chronic Kidney Disease	27.1
Obesity	7.1
Pedestrian Injuries	75.9
Physical Health Not Good	17.0
Stroke	19.7
Health Risk Behaviors	—
Binge Drinking	65.1
Current Smoker	9.9
No Leisure Time for Physical Activity	13.9
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	6.8
Elderly	52.4

English Speaking	24.1
Foreign-born	57.7
Outdoor Workers	10.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	70.2
Traffic Density	78.7
Traffic Access	67.4
Other Indices	—
Hardship	89.7
Other Decision Support	—
2016 Voting	8.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	69.0
Healthy Places Index Score for Project Location (b)	11.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health and Equity Evaluation Scorecard not completed.

8. User Changes to Default Data

Screen	Justification
Land Use	Lot Acreage from Project Description
Construction: Construction Phases	No Demolition.
Operations: Hearths	Electric Fireplaces Only
Operations: Landscape Equipment	365 summer days

APPENDIX B
Phase I Cultural Resources Assessment Eucalyptus HUD Project Riverside County, California APN 481270058

February 2023

Phase I Cultural Resources Assessment
Eucalyptus HUD Project
Riverside County, California
APN 481270058

Prepared on Behalf of:

CASC Engineering and Consulting
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Prepared for:

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Prepared by:

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DUKE C R M Project Number: C-0366

August 2022

Fieldwork Performed July 2021

Township 3 South, Range 3 West, Section 6 &7, USGS 7.5' *Sunnymead, Calif.*
Keywords: 1.4 acres, Negative Findings

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TABLE OF ABBREVIATIONS

APE ..... Area of Potential Effects
BERD ..... Built Environment Resources Database
CEQA ..... California Environmental Quality Act
City ..... City of Moreno Valley
CRHR ..... California Register of Historical Resources
DPR ..... Department of Parks & Recreation
DUKE CRM ..... Duke Cultural Resources Management, LLC
EIC ..... Eastern Information Center
GyC2 ..... Greenfeld sandy loams
HACR ..... Housing Authority of the County of Riverside
HUD ..... Housing and Urban Development
m ..... meters
MLD ..... most likely descendent
NAHC ..... Native American Heritage Commission
NHPA ..... National Historic Preservation Act
NRHP ..... National Register of Historic Places
PCT ..... Paleocoastal Tradition
Project ..... Eucalyptus Avenue HUD Project
RaB3 ..... Ramona sandy loams
RPA ..... Registered Professional Archaeologist
WPLT ..... Western Pluvial Lakes Tradition

TABLE OF APPENDICES

MANAGEMENT SUMMARY

Duke Cultural Resources Management, LLC (DUKE C R M) is under contract to the CASC Engineering and Consulting, to provide cultural resources services for the Eucalyptus Avenue HUD Project (Project) located in the City of Moreno Valley, Riverside County, California. The project entails the construction of seven (7) single-family homes on a 1.4-acre parcel located along Eucalyptus Avenue between Heacock Street and Indian Street. This represents the Area of Potential Effects (APE). The Project site is within the HUD-CDBG Low/Med Block Group Administrative District. The City's vision for the Project is to develop affordable housing with funding supported by HOME funds through the Department of Housing and Urban Development (HUD).

The purpose of this report is to document efforts made to comply with the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The Housing Authority of the County of Riverside (HACR) is the lead agency under Section 106 of the NHPA. The City of Moreno Valley (City) is the lead Agency for CEQA.

The cultural resource assessment included requesting a records search from the Eastern Information Center (EIC), historic background research from public and private sources, and a Phase I Intensive Field Survey to identify prehistoric or historic era cultural resources. The EIC cultural records search was requested June 23, 2022 and received on July 20, 2022. No previously recorded archaeological or historic sites were recorded within the Project boundaries and two historic structures (P-33-007284 and P-33-007289) were documented within the ½ mile search radius. In addition, the EIC documented four (4) previous investigations within the ½ mile search radius; none of which covered the current Project area.

The Project area was heavily disturbed by prior construction in the historic period, along with the demolition of structures in the early 21st century. Substantial disturbance decreases the sensitivity for prehistoric and very early historic archaeological resources within the Project, but low sensitivity for intact subsurface historic deposits in the form of historic trash pits or privies that may contain valuable data remains. An Archaeological Sensitivity Training tailboard presentation shall precede ground disturbance to make workers aware of the types of resources that may be present and protocols for treatment of Inadvertent Finds. If intact subsurface cultural resources are encountered during earth moving, work should halt with 50 feet of the find until such time as a qualified archaeologist can be retained to assess the find. The archaeologist may recommend that these cultural resources undergo evaluation to determine NRHP- and CRHR-eligibility with a focus of Criterion D/4 regarding data potential. Archaeological monitoring is not recommended unless discoveries are made.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, a cemetery is place where six or more human bodies are buried (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052).

Additional efforts may be necessary if the proposed Project changes with regards to earth disturbing activities.

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INTRODUCTION

Duke Cultural Resources Management, LLC (DUKE C R M) is under contract to the CASC Engineering and Consulting, to provide cultural resources services for the Eucalyptus Avenue HUD Project (Project) located at 21430 Eucalyptus Avenue, City of Moreno Valley, County of Riverside, California. The purpose of this report is to document compliance with Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The Housing Authority of the County of Riverside (HACR) is the federal lead agency. The City of Moreno Valley (City) is the CEQA Lead Agency.

Project Description and Area of Potential Effects

The Project, located within APN 481270058, City of Moreno Valley, Riverside County, California (Figure 1). The Project is illustrated on the *Sunnymead, Calif* USGS 7.5-minute quadrangle in Township 3 South, Range 3 West, Section 6 and 7 (Figure 2). The boundary of the APN comprises the Area of Potential Effects (APE) for both direct and indirect effects (Figure 3). Earth disturbance is anticipated to a depth of a minimum of 5 ft. below the present ground surface.

The Project will be composed of seven (7) single-family homes on a 1.4-acre parcel located along Eucalyptus Avenue between Heacock Street and Indian Street in the City. The Project site is vacant land with visible signs of routine disturbance (i.e., discing). The Project area is zoned Specific Plan Village Residential (SP 204 VR) which constitutes residential development allowing a range of densities from small, to single family lots with detaches homes, to attached multi-family complexes. Additionally, the Project site has a General Plan designation of Multi-Family and Medium-High Residential.

The Project site is within the HUD-CDBG Low/Med Block Group Administrative District. The City's vision for the Project is to develop affordable housing with funding supported by HOME funds through the Department of Housing and Urban Development (HUD).

The Project is anticipated to qualify as a CEQA Categorical Exemption under Article 19. Categorical Exemptions, Section 15332. Infill Development. Based on the proposed seven (7) dwelling units, the Project will require the preparation of an Environmental Assessment and Findings of No Significant Impact per NEPA.

The minimum lot size for the seven (7) residences is 6,330 sq. ft. Homes will range from a 2,091 sq. ft. to 2,332 sq. ft. Access for each residence will be provided off of Strickler Way. Each home will have a front and rear yard, a car garage in front, and a private shared drive which will be divided among the lots for reciprocal shared access.

Regulatory Context

Existing federal, state, and local regulations require the identification of historic properties and cultural resources during the planning stage of new projects.

NHPA/Section 106

Section 106 of the NHPA requires that federal agencies take into account the effects of their undertakings on historic properties and seek ways to avoid, minimize, or mitigate any adverse effects on such properties (36 CFR 800.1(a)). "Historic properties" include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior" (36 CFR 800.16(1)). The following criteria determine eligibility of a site for inclusion on the NRHP as developed by the National Park Service as provided by the NHPA:

"The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

A. that are associated with events that have made significant contribution to the broad patterns of our history; or

Map 1 - Project Vicinity

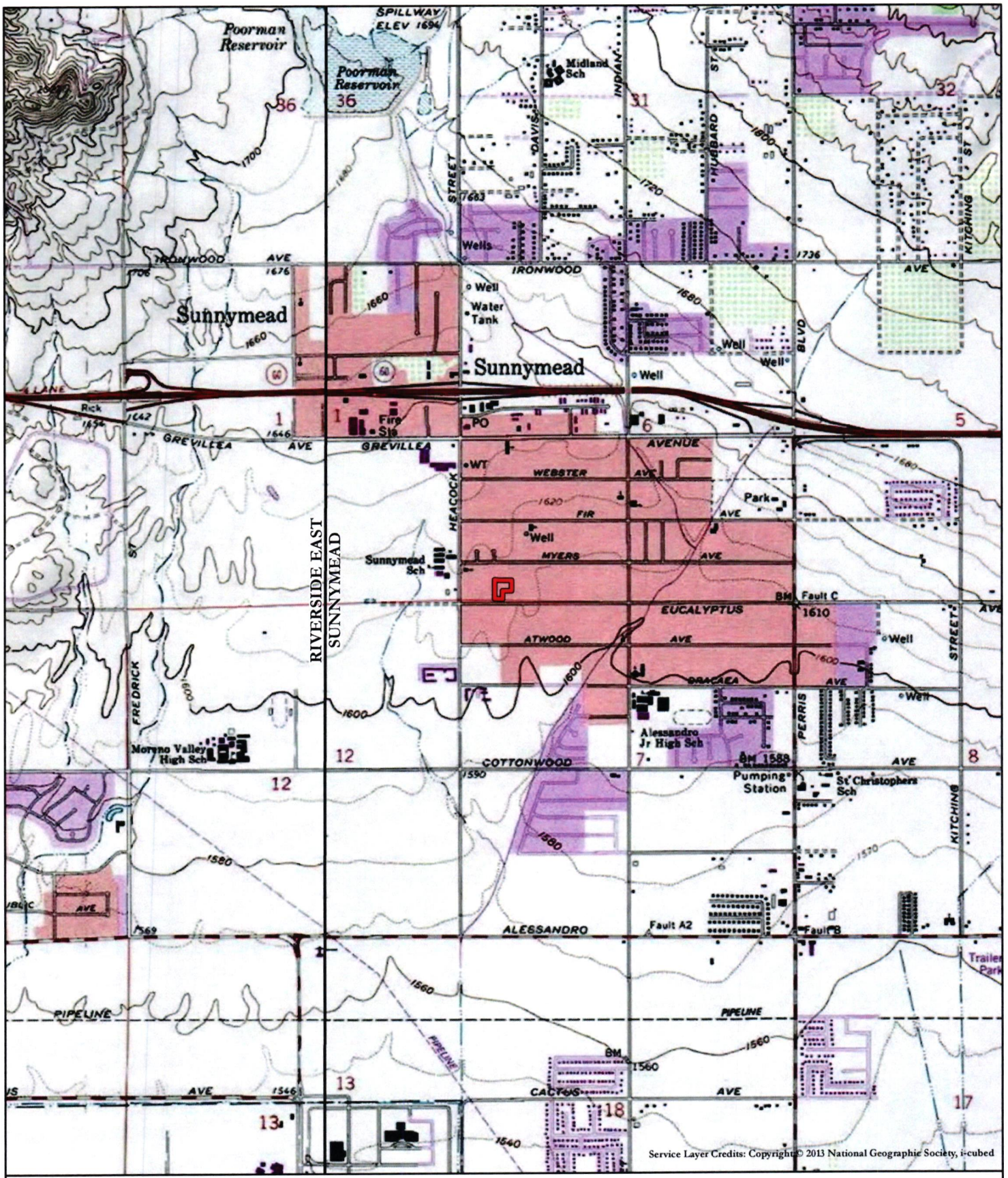
Eucalyptus HUD, Moreno Valley, C-0366

DUKE CRM

● Project Area

0 6 12 Miles N

1 inch = 6 miles 1:360,000



Map 2 - Project Location

Eucalyptus HUD, Moreno Valley, C-0360

DUKE CRM

Sunnymead, Calif USGS 7.5-Minute Quadrangle

T3S, R3W, Section 6 & 7

Date of Map: 1953 / Photorevised: 1980

Project Area

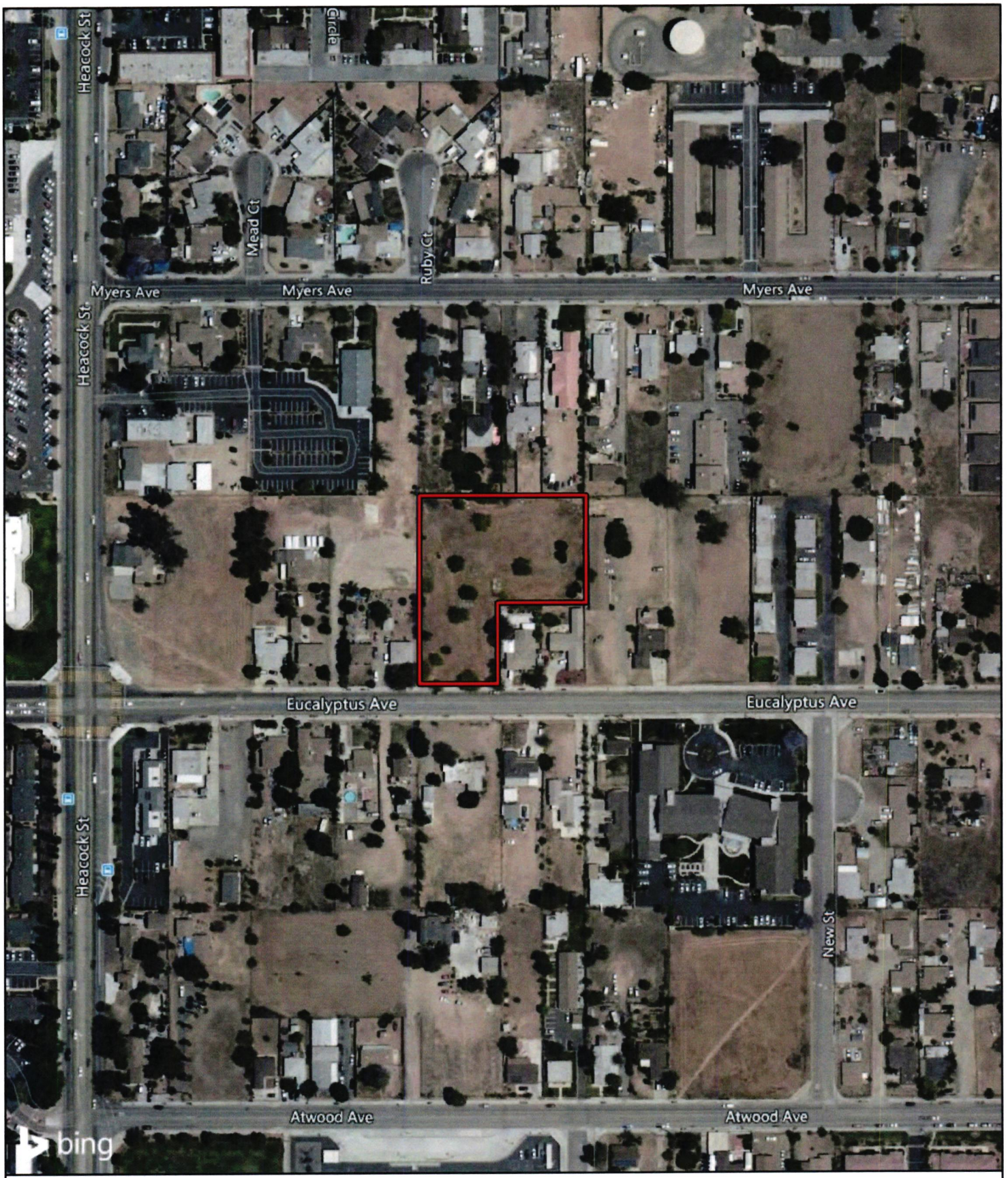
USGS 7.5' Quads

0 0.25 0.5 Miles

0 0.25 0.5 Kilometers

N

1 inch = 2,000 feet 1:24,000



Map 3 - Project Aerial

Eucalyptus HUD, Moreno Valley, C-0366

DUKE CRM

Project Area

0 100 200 Feet

1 inch =200 feet

N

1:2,400

B. that are associated with the lives of persons significant in our past; or
C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. that have yielded, or may be likely to yield, information important in prehistory or history." (36 CFR 60.4)

As used here, integrity is defined as the ability of a historic property to convey its significance. To determine which of these factors are most important will depend on the property being evaluated and which particular NRHP criterion under which the resource is considered eligible for listing.

CEQA

CEQA Guidelines define a *historical resource* as a resource listed in or determined eligible for listing in the CRHR. This includes cultural resources that have been determined for a local register or through a local historic resources survey. A resource may be considered potentially eligible for listing in the CRHR if it meets any of the four criteria listed below:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
4. Has yielded or may be likely to yield information important in prehistory or history.

Furthermore, CEQA necessitates that the lead agency considers whether the project will significantly affect unique archaeological resources that are ineligible for listing in the CRHR and to avoid these unique archaeological resources when possible or mitigate any effects to less than significant levels (PRC 21083.2). As stated by CEQA, a *unique archaeological resource* means an archaeological artifact, object, or site which clearly demonstrates with a high probability that it meets, without merely adding to the current body of knowledge, any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Research Design

The primary purpose of this undertaking is to identify cultural resources that may be eligible for the National Register of Historic Place (NRHP) or the California Register of Historical Resources (CRHR) and to determine what affects/impacts proposed Project will have on those historic properties/historical resources. This research design and resulting methodology is developed to interpret these resources in the context of the cultural traditions present. This includes those represented by Native American, Hispanic, Anglo-American and other cultural traditions.

At the theoretical level, archaeological investigations are based on partial and fragmented remnants of material items from past cultures and are viewed from a Cultural Materialism perspective. The premise of Cultural Materialism links materials, as represented by those items in the archaeological record, to the patterned action of human behavior within specific environments (culture) (Harris 1968:659). We consider Cultural Materialism a basic premise encompassing all other assumptions.

The formulation of research questions pertaining to survey-level investigations are typically based on information specific to the project area under investigation and reflective of previously gathered data. Within

the prehistoric research realm, typical regimes within a cultural ecology model would focus on probability models positing a relationship between functional site types and resource location. These correlations would, naturally, be highly dependent on the time periods represented. Thus, the identification of complexes relating to specific time periods and the establishment of prehistoric context would be paramount.

Historic Period research would similarly focus on defining how the occupants of the region utilized this environ. Identified Historic Period resources would be traced through documentation to an individual or group if possible. A survey-level recording of site constituents would be correlated with socio-economic, ethnic and religious identities of the registered occupants to formulate further research questions applicable to evaluation studies.

The Project is subject to the NHPA and CEQA which requires that lead agencies, in this case the HACR and City, respectively, consider adverse effects to historic properties and impacts to historical resources that are potentially eligible for the NRHP and/or the CRHR. This report also considers impacts to cultural resources that are potentially eligible for the NRHP.

Basic research questions include:

1. Are cultural resources located in the Project?
    a. Are the conditions conducive to cultural resources within the Project?
    b. What is the sensitivity of the Project location for cultural resources?
    c. What is the level of prior disturbance to the property?
    d. Are there cultural resources that may be impacted by the Project?
    e. What is the potential for buried cultural resources?
2. Should any cultural resources be considered potential *historic properties/ historical resources* for the purposes of NHPA/CEQA? Are they potentially NRHP-eligible or significant resources according to CEQA and the CRHR criteria, and do the possess integrity?
3. What impacts will the proposed Project have on any potential *historic properties/ historical resources*?
4. What treatment, avoidance and/or mitigation measures can be implemented to decrease the level of impact to potential *historic properties/ historical resources to less than significant?*

SETTING

Natural Setting

California is divided into 11 geomorphic provinces, each naturally defined by unique geologic and geomorphic characteristics. The Project is located in the northeastern portion of the Peninsular Ranges geomorphic province. The Peninsular Ranges province is distinguished by northwest trending mountain ranges and valleys following faults branching from the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north to the San Bernardino – Riverside county line (Norris and Webb 1976), west into the submarine continental shelf, and south to the California state line.

The Project APE consists of an approximately 1.4-acre parcel in the northern end of the City of Moreno Valley, in Moreno Valley (see Figure 2). The Project property is flat overall and is at approximately 1616 ft. above mean sea level.

The Project APE is geologically and geographically characterized by younger Holocene alluvial sands and gravels atop older Pleistocene deposits. Elements of the mountainous region to the south of the project area are comprised of granitic rocks chiefly of Mesozoic age and Pre-Cenozoic metamorphic rocks of unknown age (Rogers 1965). The geology in the Project area is young Holocene to late Pleistocene alluvial fan deposit.

Two soil types have been mapped within the Project area: Ramona (RaB3) and Greenfeld (GyC2) sandy loams. RaB3 is associated with western Riverside County with slope ranging from 2 to 8 percent. It is associated with alluvial fan deposits derived from granite. Soil types on the Project area transition to GyC2 soils in the southeastern corner of the Project area. Like RaB3, GyC2 is associated with western Riverside County but with slope ranging from 0 to 5 percent. It too is associated with alluvial fan deposits derived from granite. Vegetation within the Project area is a mix of native and non-native invasive grasses.

Cultural Setting

Prehistory

Two primary regional schemas are commonly cited in the archaeological literature for western Riverside County where the Project is located. These schemas or syntheses generalize the presence or absence of certain artifact types into explanatory frameworks of temporal chronologies and/or subsistence practices. Schemas are necessary given that many archaeological sites lack material amenable to absolute dating (e.g., ^{14}C carbon for radiometric dating). Therefore, researchers need to cross-date sites by comparison to either coastal or desert chronologies with established chronological sequences backed by absolute dates. In western Riverside County, it is thought to be the meeting ground of both coastal and inland desert schemas and neither exclusively explains prehistoric finds.

The first schema, advanced by Wallace (1955), defines four cultural horizons for the southern California coastal province, each with characteristic local variations:

I. Early Man (~9000–8500 Before Present [BP]) is a hunting culture based on almost exclusive evidence of chipped-stone hunting materials: dart points, scrapers, choppers, and bifaces.
II. Milling Stone (8500–4000 BP) reflects a change to a more sedentary, plant-collecting lifestyle as evidenced by the introduction and dominance of milling stone artifacts and a decrease in well-made projectile points.
III. Intermediate (4000–1500 BP) is characterized by a larger dependency on hunting, use of the dart and atlatl, and the shift from using the mano/metate to mortar/pestle. However, knowledge of this horizon suffers from lack of knowledge about what occurred during this time, not a lack of inhabitants along the southern California coast.
IV. Late Prehistoric (1500~200 BP) contains a more nuanced artifact assemblage indicative of a more complex lifestyle and an increase of population. This horizon is characterized by an increase in bow and arrow use, steatite containers, pottery, circular fishhooks, perforated stones, asphaltum, diversified bone tools, ample shell ornaments, and elaborate mortuary customs.

Warren and Crabtree (1986) employ an ecological approach to the deserts of southern California, defining five traditions in prehistory:

I. Lake Mojave (12000–7000 BP)
II. Pinto (7000–4000 BP)
III. Gypsum (4000–1500 BP)
IV. Saratoga Springs (1500–800 BP)
V. Shoshonean (800~200 BP)

Warren and Crabtree (1986) viewed cultural continuity and change in terms of various significant environmental shifts, defining the cultural ecological approach for archaeological research of the California deserts. The authors viewed changes in settlement pattern and subsistence as cultural adaptations to a changing environment, beginning with the gradual environmental warming in the late Pleistocene, the desiccation of the desert lakes during the early Holocene, the short return to pluvial conditions during the middle Holocene, and the general warming and drying trend, with periodic reversals that continue to this day. The work by Warren and Crabtree (1986) is built upon, in part, by Warren (1980) in which he argued for a chronology based on projectile points as period markers backed by radiocarbon assays providing absolute dates.

The two schemas contrast in important ways. The units employed by Warren are "traditions," and in contrast to Wallace (1955), traditions may be spatially restricted but display temporal continuity. For Wallace, "horizons" or "periods," are extensive through space but restricted in time. More recent schemata have been attempted to reconcile these differences. Koerper and Drover (1983) synthesized chronologies for coastal southern California and employed Wallace's (1955) horizon terminology but use radiometric data to sequence stylistic changes observed in the artifact assemblages, which they interpreted as material indication of cultural change through time. Regardless of the overall schema to best explain the prehistory of western Riverside County, the

region can be understood within broad chronological frameworks and as the meeting ground of the coastal and desert subsistence patterns.

Early Holocene (11,600 – 7,600 BP)

Traditional models of the prehistory of California hypothesize that its first inhabitants were the big game hunting Paleoindians who lived at the close of the last ice-age (~11,000 years BP). As the environment warmed and dried, large Ice Age fauna died out, requiring adaption by groups to survive. The western Great Basin and deserts of southern California were characterized by large pluvial (rainfall-fed) lakes, streams, marshes, and grasslands. The human response to this environment is known as the Western Pluvial Lakes Tradition (WPLT) (Moratto 1984). The WPLT is generally identified by an advanced flaked-stone industry of foliate knives/points, Silver Lake and Lake Mojave points, lanceolate bifaces, and long-stemmed points. Other flaked-stone tools include crescents, scrapers, choppers, scraper-planes, hammer stones, cores, drills, and gravers. People of this period hunted diverse populations of smaller animals and collected a wide number of plants from diverse eco-zones. Importantly, this period lacks widespread evidence of milling stones, and, therefore, hard seed processing was likely not widely practiced. Sites are generally found along the shores of former pluvial lakes, marshes, and streams (Moratto 1984). The desert manifestation of the WPLT is the Lake Mojave Complex, while along the coast the WPLT is seen in the San Dieguito Complex.

The Paleocoastal Tradition (PCT) has many similarities to the WPLT, but it reflects a coastal adaptation (Davis et al. 1969). PCT sites are located along bays and estuaries. Subsistence patterns indicate the consumption of mollusks, sea mammals, sea birds, and fish in addition to land plants and animals. The argument for a PCT has gained momentum. This is based on research that has been conducted along the California coast and the adjacent Channel Islands (Byrd and Raab 2007). A recent study dates habitation on San Miguel Island back to ~11,300 BP (Daisy Cave), while a site on San Clemente (Eel Point) shows that a PCT was entrenched at Eel Point in the early Holocene, with the hunting of seals, sea lions, and dolphins, as well as the gathering of shellfish (Byrd and Raab 2007).

Middle Holocene (7,600 – 3,650 BP)

The middle Holocene is a time of change and transition. As conditions continued to warm, pluvial lakes and streams in the desert disappeared. This resulted in a shift in subsistence strategies, namely a shift to the gathering of plant seeds, grasses, and shellfish along the coast as the primary dietary staple. Fishing and the hunting of smaller animals played a less important role in day-to-day activity. This shift in subsistence-strategies is what Wallace named the Millingstone Horizon (Wallace 1955) and this name has continued among archaeologists working on the coastal province of southern California. Large habitations are seen in the inland areas and considerable variability is seen along coastal occupation of southern California. Occupation revolved around seasonal and semi-sedentary movements in coastal Orange and San Diego counties. Trade networks are postulated by researchers that have dated *Olivella* sp. grooved rectangle shell beads as far north as central Oregon dating to 4900-3500 BP (Byrd and Raab 2007). Characteristics of the middle Holocene sites include ground stone artifacts (manos and metates) used for processing plant material and shellfish, flexed and extended burial beneath rock or milling stone cairns, flaked core or cobble tools, dart points, cogstones, and discoidals.

Late Holocene (3,650 – 233 BP)

During the late Holocene there was a migration of Takic speakers from the Great Basin and San Joaquin Valley into southern California (Sutton 2009, 2010). Characteristics of the late Holocene include the introduction of the bow and arrow, stone mortar, and pestle, use of ceramics, and a change in mortuary behavior from inhumations to cremations in southern California. This was also a period of climatic fluctuation. Paleoenvironmental data show that periods of drought alternated with cooler and moister periods (Vellanoweth and Grenda 2002; Byrd and Raab 2007; Jones et al. 2004). This resulted in dynamic regional cultural patterns with considerable local variation. Byrd and Raab (2007) suggest that foragers in southern California over-exploited high-ranked food, such as shellfish, fish, marine and land mammals, and plant remains. This led to resource depression, causing people to forage more costly resources, such as acorns, which were more abundant but required increased acquisition and processing times.

Local Prehistory

Local regional archaeological research presents a rich background to compare the findings in the current Project area. Various themes of research present themselves and these reflect broader trends in hunter-gatherer archaeological research. These themes are as follows: chronology, site formation processes, site structure and function, mobility, settlement strategy and patterns, economy, subsistence, and cultural organization (including but not limited to organization of gendered behavior and ritual/religion).

Approximately 20 miles to the southeast of the Project, the Eastside Reservoir Study presents a regional approach to examining questions of Native American settlement. Numerous sites were present within the Eastside Reservoir study area and spanning occupation from the Middle Holocene (7,500 BP) to the Late Prehistoric period (Onken 2001). The Late Prehistoric period sites within this study area present a uniform pattern of dependency upon water resource availability for settlement location while during previous periods water availability does not appear to be such a determinant factor in site location (Goldberg 2001:602-604).

Ethnographic Traditions

The Project is located within the ethnographic territory of the Luiseño Indians, but also supported Cahuilla Indians at the western edge of their territory. The Luiseño and Cahuilla are both Takic speakers and are believed descended from Late Prehistoric populations of the region. Takic is part of the larger Uto-Aztecan language stock which migrated west from the Great Basin (Bean and Smith 1978, Shipley 1978).

Luiseño

The Luiseño share many similar cultural traits with the Cahuilla. The Luiseño lived in sedentary and independent village groups, each with specific subsistence territories encompassing hunting, food gathering, and fishing areas. Villages were usually located in valley basins, along creeks and streams adjacent to mountain ranges where water was available and where the villages would be protected from environmental conditions and potential enemies. Most inland populations had access to fishing and food gathering sites on the coast (Bean and Shipek 1978).

Luiseño economic and subsistence practices centered upon the seasonal gathering of acorns and seeds; the hunting of deer and small mammals such as rabbits, wood rats, ground squirrels, and birds. Coastal foods included sea mammals, fish, and shellfish. Tool technologies were organized around food collection, storage, and preparation strategies, which was reflected in the type, size, and quantity of food items gathered. Stone (lithic) tools included two types: ground stone and flaked stone tools. Ground stone equipment included: mortars, pestles, manos and metate grinding slicks, made from granite, schist, and gneiss. Flaked tools included: bifaces, projectile points, scrapers, and gravers, fabricated from siliceous rock such as chert and jasper, microcrystalline chalcedony, obsidian, fine grain ingenious rocks such as basalt rhyolite, and andesite, and hard silica such as quarts and quartzite. Utilitarian tools were constructed from wood, animal bones, skins, and/or woven from flora materials depending on need. Hunting activities were conducted both on an individual basis and/or organized into group activities, depending on seasonal factors and the game hunted. Acorns provided as much 50 percent of the Luiseño diet (White 1963). They provided a reliable and abundant food source that was high in calories and could be easily stored for future use. Acorn collection was a central tenant in the lives of the Luiseños and dominated their economic and social structure (Basgall 1987, Johnson and Earle 1987).

Villages were organized around an inherited chief who exerted sole control over the economy, religious rituals, and territorial matters within the village (Bean and Shipek 1978:555). The chief at times would consult with a council of elders and shamans on matters of religious practices and on environmental conditions affecting village life. Large villages may have had a complex behavioral and political structure due to their territorial size and economic control, while the smaller villages' political complexity was limited by their territorial size (Strong 1929; Bean and Shipek 1978:555).

Cahuilla

The Cahuilla dialect, *ivia*, refers to the Cahuilla as the *Iviatim*. The word Cahuilla is likely derived from the *ivia* word for master, *kawi'a*. Their territory included the Coachella Valley as well as the San Jacinto and Santa Rosa Mountain ranges. Bean and Smith (1978) estimated that the Cahuilla numbered between 6,000 and 10,000

people at the time of Spanish contact. Ethnographers have divided this population by habitation locale (Mountain, Pass, and Desert) whereas the Cahuilla divided themselves by patrilineal descent clans and one of two moieties (Wildcat and Coyote). Further distinctions were made within clans of politically important and independent subsidiary lineages. These lineages occupied their own villages as documented by Cahuilla ethnographic consultants in the early 20th century and from Franciscan Mission records (Earle 2004).

Politically and ceremonially Cahuilla clans were led by a Chief or *Net*. The *Net* had charge of the sacred dance house and the sacred bundle, *masut*, which consisted of matting which was wrapped around items sacred to the clan such as ritual paraphernalia. Importantly, the *masut* was the sacred expression of each clan. A *Paha*, ritual assistant, is also found among other Takic speaking groups. The office of *Paha* varied however, as it was not always present within some of the southern-most Desert Cahuilla clans (Bean and Saubel 1972; Hooper 1920). As other Takic speaking groups did, the Cahuilla would publicly gather for the naming of children, marriage, female, and male initiation ceremonies, for the ascendency of a *Net*, for an Eagle-Killing Ceremony and the mourning ceremony. The mourning ceremony took place as a way to collectively mourn all those that died since the previous mourning ceremony. Each person was cremated along with his or her individual possessions in a ceremony separate from the mourning ceremony. Mourning ceremonies were one of the most important ceremonies for clan in that sacred songs were sung, sacred dances were danced, and moieties exchanged food and valued goods.

The three ethnographically documented zones of Cahuilla habitation (Pass, Mountain, and Desert) serve as general guidelines for understanding their subsistence practices. In general Mountain and Pass Cahuilla diet emphasized acorn, yucca, agave, and pinyon gathering in the mountain and foothill regions. In contrast Desert Cahuilla focused on the gathering of mesquite, cactus, and hard seeds such as screwbean, and juniper (Bean and Saubel 1972). These generalizations can only be broadly applied as the Cahuilla inhabiting different zones were not mutually exclusive to each other. Desert Cahuilla in the Coachella Valley retained gathering areas in the Santa Rosa Mountains or other upland regions. Desert Cahuilla also utilized the resources in the foothills. The eastern foothills of the Coachella Valley produced agave and hard seeds. Also, the foothills on the western side of the Coachella Valley produced cactus, agave, and hard seeds and on higher upslope, pinyon, for the Desert Cahuilla. Further divisions can be made for the biotic sub regions of the Coachella Valley. Kelly (1977) distinguished the "agave desert" located in the Coachella Valley, the west side of the Salton Sea and in Imperial Valley and the "severe desert" located east and south of these regions. In his estimation, the Cahuilla and others adapted to the agave desert but not the severe desert. This adaptation involved the seasonal movement from desert floors up into the mountain foothills.

The Cahuilla were also observed to cultivate small quantities of corn, beans, squashes, pumpkins, melons, and wheat as early as 1824 by the Romero expedition. These crops and the cultivation of them potentially made their way from the Colorado River area to the Coachella Valley. The inhabitants of the Coachella did not practice flood recessional agriculture of the Colorado River groups (Bean and Lawton 1993). Based upon ethnographic interviews, Strong (1929:38) noted that he had been told by Francisco Nombre that his grandfather told him that the cultivation of corn and other crops by the Cahuilla was a recent practice and that the Cahuilla used to obtain corn from the "Yumas". Corn would likely have been available to the Cahuilla via exchange systems between foraging groups who have access to resources outside of the Colorado River and horticulturalists along the river. Regardless of the timing of cultivation of these crops, by the 1850s oasis gardens and to a lesser extent, canyon gardens were important sources of foodstuffs (Bean et al. 1995).

Historic Traditions

The historic era in California is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

The Spanish Period (1769-1821) is represented by European exploration of the region; establishment of the San Diego Presidio and missions at San Gabriel and San Luis Rey; and the introduction of livestock, agricultural goods, and European architecture and construction techniques. Early exploration of the Riverside County area began in 1772 when Lieutenant Pedro Fages (then Military Governor of San Diego) crossed through the San Jacinto Valley. Permanent European settlement began about the turn of the 18th century through the issuance

of land grants and grazing permits, and Spanish influence continued to some extent after 1821 due to the continued implementation of the mission system. Between 1810 and 1820, the region lost most of its native population to the San Luis Rey Mission; however, other groups, including the Cahuilla, began moving into the region. In 1820, Mission San Luis Rey established the San Jacinto Rancho and sent Luiseño "converts" from the south and west into the region to care for livestock (Bean and Vane 2001). The northern boundary of the rancho is located some four (4) miles to the southeast, but most of the region was utilized for livestock where feed was available.

The Mexican Period (1821-1848) began with Mexican independence from Spain and continued until the end of the Mexican-American War. The Secularization Act resulted in the transfer, through land grants (called ranchos) of large mission tracts to politically prominent individuals. Sixteen ranchos were granted in Riverside County, the first to Juan Bandini in 1838. The project location is north of what was the San Jacinto Rancho Sobrante, granted to María del Rosario Estudillo de Aguirre in 1846. At that time, cattle ranching was a more substantial business than agricultural activities, and trade in hides and tallow increased during the early portion of this period. Until the Gold Rush of 1849, livestock and horticulture dominated California's economy.

The American Period (1848-present) began with the Treaty of Guadalupe Hidalgo, and in 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. The cattle industry reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large pastoral estates in California, and demand for beef during the Gold Rush led to a cattle boom that lasted from 1849–1855. However, beginning about 1855, the demand for beef began to decline due to imports of sheep from New Mexico and cattle from the Mississippi and Missouri Valleys. When the beef market collapsed, many California ranchers lost their ranchos through foreclosure. A series of disastrous floods in 1861–1862, followed by two years of extreme drought, which continued to some extent until 1876, altered ranching forever in the southern California area.

City of Moreno Valley

The Project area is within the community of Sunnymead, one of three communities, Edgemont and Moreno being the other two, that incorporated in the City of Moreno Valley in 1984 (City of Moreno Valley 2022). Until the 20th century, the three communities were small agricultural settlements with water provided by Frank E. Brown's Bear Valley Land and Water Company. The communities were dealt a blow when the Redlands claimed the water rights. By 1901, few people resided in the Moreno Valley, and those who remained turned primarily to the dry farming of hay, grain, and grapes. The construction of March Field by the US Army Air Service in 1918 changed the character of the surrounding communities. March Field initially trained fighter pilots. It was closed in 1922 and reopened in 1927. The field was further developed in response to the US entry into WW II where it once again trained pilots. Further transformation occurred in the 1980s when the area became a bedroom community for the Los Angeles metropolitan area. The relationship of the communities and the airfield continues to present with the realigned to March Air Reserve Base and the opening of portions of the field to commercial traffic.

METHODS

Records Search

On June 23, 2022 DUKE C R M initiated a records search of the Project area and a one half-mile radius at the Eastern Information Center (EIC) at the University of California, Riverside. The EIC is the regional office of the California Historical Resources Information System housing records for Riverside County. The records search includes a review of all recorded historic and prehistoric archaeological sites within a specified search radius of the Project area, as well as a review of known cultural resource survey and excavation reports. The results of the EIC records search were received on July 20, 2022.

Mr. Glenn examined the on-line Historic Built Environment Resources Database (BERD) maintained by the SHPO on August 3, 2022. The BERD includes the NRHP/CRHR, California Historical Landmarks, and California Points of Historical Interest. The internal archives at DUKE C R M were also inspected for relevant background information.

Background Research
Several sources were used to conduct background research for the project including historical aerial photos and USGS topographic maps. Specific sources include the University of California, Santa Barbara Library FrameFinder, HistoicAerials.com and the USGS Historical Topographic Map Explorer.

Field Survey
The goal of the pedestrian survey was to identify all cultural and paleontological resources within the Project boundaries. Pedestrian survey transects were spaced no greater than 5 meters (m) apart. An iPhone X smartphone with the GeoCam Pro App, and field map was used to locate the Project boundary, and to record the location of identified cultural resources. Sites and built-environment resources were documented on State of California Department of Parks and Recreation (DPR) 523 series forms with photographs taken on a Fuji Finepix XP70 16 MP digital camera and a Moto G5 Play smartphone with the GeoCam Pro App.

Personnel
The records search was initiated by Brian Glenn, M.A., Registered Professional Archaeologist (RPA). The field survey was conducted by Morgan Bender, M.A., RPA. All work was conducted under the direct supervision of Brian Glenn, M.A., RPA and Curt Duke, M.A., RPA.

Mr. Glenn is the Principal Investigator/Archaeologist assigned to the Project for DUKE CRM and is the principal author of this report. In addition to being an RPA, Mr. Glenn meets the professional qualifications of the Secretary of the Interior for prehistoric and historical archaeology. He has worked in all phases of archaeology (archival research, field survey, testing and data recovery excavation, laboratory analysis, construction monitoring) in California for more than 30 years.

Ms. Bender is the secondary author under the supervision of Mr. Glenn. Mr. Duke oversaw all work and provided peer review of this report (Appendix A).

RESULTS
Records Search
A records search with the EIC was completed on July 20, 2022 (Appendix B). The records search identified four previous surveys had been conducted within the ½ mile records search radius; none of these reports address the Project area (Table 1). The EIC provided records for two (2) cultural resources identified within the records search radius (Table 2).

The two (2) cultural resources within the search radius, P-33-007284 and P-33-007289, are historic era structures located approximately ½ mile northeast of the Project area. Both were estimated to be constructed circa 1915 as residential structures.

Research indicates there are no previously recorded cultural resources within the Project boundary. There are several historic resources in the vicinity; however, none will be impacted by the current project.

Native American Inquiries
However, on June 22, 2022, Mr. Glenn requested a Sacred Lands File search from the Native American Heritage Commission (NAHC). The NAHC responded on July 29, 2022 indicating no recorded tribal resources have been recorded in proximity to the Project area (NAHC 2022; Appendix C). The NAHC provided a Native American Contact List that might be contacted regarding tribal resources not on file with the NAHC. DUKE CRM was not contracted to conduct Native American consultation for this project.

Table 1: Cultural resource reports (1/2-mile search radius of the Project area) on file with the EIC

File #	Year	Author	Affiliation	Title
RI-04992	2004	McKenna et al.	McKenna et al.	An Architectural Evaluation of Structures Located within Assessor Parcel Numbers 482-090-009-0, -010-0, and 033-0, within the City of Moreno Valley, Riverside County, California.
RI-08554	2011	Michael Hogan, Bai "Tom" Tang, John Goodman, and Daniel Ballester	CRM Tech	California Living Moreno Valley Project
RI-08654	2011	Wayne H. Bonner, Sarah A. Williams, and Kathleen A. Crawford	Michael Brandman Associates	Cultural Resources Search and Site Visit Results for T-Mobile USA Candidate IE24173-B
RI-09856	2017	Barbie Getchell and John E. Atwood	PAST, Inc	Phase I Cultural Resources Inventory Report for APN 292-160-023 Located on Sunnymead BLVD., Just West of Heacock Street, City of Moreno Valley, Riverside County, California

Table 2: Previously Identified Cultural Resources within ½-mile of the Project area

Resource No.	Resource Type	Description	Distance & Direction
P-33-007284 / OHP Property Number - 062625	Historic Residence	One and half-story vernacular, lap-siding construction residential building from circa 1915. 24638 Fir Avenue, Sunnymead, California.	½ mile NE
P-33-007289 / OHP Property Number - 062630	Historic Residence	Two-story vernacular, board and batten construction ranch house from circa 1915. 12680 Indian Street, Sunnymead, California.	½ mile NE

Background Research

Maps and aerial imagery of the Project and surrounding area were examined for details that would aid in reconstructing the history of the Project area. Land patents from the Bureau of Land Management, Government Land Office (BLM GLO [BLM 2022]) System was searched. Newspaper articles, historic maps, and public access websites were also used.

Analysis of BLM GLO records show that the south half of Section 6 was part of a larger land holding made out to Gustave Make in 1870 (BLM 2022). By 1901 (USGS *Riverside* 1:62,500 1901), the Project area is within an established grid road system with a north-south trending Southern California Railroad to the west. The *Perris* 1:24,000 USGS quadrangle from 1942 illustrates Eucalyptus Avenue as a dirt road connecting to Heacock and Indian streets. Also present are two structures near or within the Project area. The east-west trending US Highway 60 is located about a mile north of the Project area. A 1962 aerial image (FrameFinder 2022a: c-24244_1-87) records what appears to be a residential structure along Eucalyptus Avenue surrounding by a U-shaped drive. Additional structures are visible directly behind the residential structure and in the southwestern portion of the Project. The northern half of the Project area appears devoid of structures with possible animal pens in the northeast quarter. By 1967 (*Sunnymead* 1:24,000 1967; FrameFinder 2022b: AXM-1967_3hh_52) and continuing into 1980 (*Sunnymead* 1:24,000 1980) the community of Sunnymead has a more developed road system and additional light development but is otherwise unchanged.

Field Survey

The Phase I archaeological field survey of the Project area was conducted by DUKE CRM archaeologist Morgan Bender, M.A., RPA on July 29, 2021 (Figures 4). Pedestrian transects spaced no greater than 5 m apart and 100% of the Project area was intensively surveyed. Surface visibility was at or near 100% and the weather was sunny and hot. Soils were reddish brown sandy loam little or no gravels at the surface (Figure 5).

The Project area had been cleared of structures and vegetation with a few resprouted ornamental plants. What remained were three (3) slab foundation within poured footings and a concrete chunk debris pile (Figures 6 & 7). Construction techniques are consistent with expectations based on aerial imagery analysis, circa 1960s

construction (see above). Given their relatively modern age and condition, these features were not recorded. A high volume of modern debris is present throughout site (Figure 8).

Figure 4. Project area from Eucalyptus Avenue (facing north)

Site Sensitivity Summary

Based on research, including a records search with the SCCIC, and the result of survey, DUKE CRM finds the Project property has low sensitivity at both the surface and subsurface prehistoric resources. Based on research regarding the age of the structural remnants and their lack of integrity, the APE has a low sensitivity for the presence of historic resources eligible for the NRHP or CRHR.

FINDINGS AND RECOMMENDATIONS

The current study did not identify any cultural resources within the Eucalyptus HUD APE that would be eligible for either the NRHP or the CRHR. Therefore, it is concluded that no historic properties will be affected by this undertaking under the NRHP and there will be no significant impacts to historical resources under CEQA.

The substantial previous disturbance decreases potential for encountering previously unidentified archaeological resources within the Project. However, due to the age of previous disturbance and location within the old part of Sunnymead, the Project area may include previously unidentified, intact subsurface trash pits or privies.

The Project area has low sensitivity for buried historic-era cultural resources. Should they exist, avoidance and preservation of historic properties/historical resources would the preferred measure for archaeological resources under both NHPA and CEQA.

The following training and protocol measures are recommended to identify potential historic properties/historical resources during construction with the goal of reducing adverse effects/significant impacts to be reduced to a level of less than significant.

Figure 5. Overview of soils within the APE (facing NE)

Figure 6. Poured foundation remnants. (facing)

Figure 7. Debris pile of concrete chunks (facing View from NW corner.)

Figure 8. Modern debris within the APE. (facing View from NE corner.)

Archaeological Sensitivity Training

Prior to disturbance, either demolition or excavation, a qualified archaeologist should present to field staff, cultural resources sensitivity training. The archaeologist shall summarize the types of resources that may be present subsurface, as well as protocols in the event inadvertent cultural resource finds are discovered (see below).

Inadvertent Finds Procedures

If intact subsurface cultural resources are encountered during earth moving, work should halt with 50 feet of the find until such time as a qualified archaeologist can be retained to assess the find. The archaeologist may recommend that these cultural resources undergo evaluation to determine NRHP- and CRHR-eligibility with a focus of Criterion D/4 regarding data potential.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, a cemetery is place where six or more human bodies are buried (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052).

If the proposed Project changes additional efforts may be necessary.

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Appendix A
Resumes

DUKE CRM

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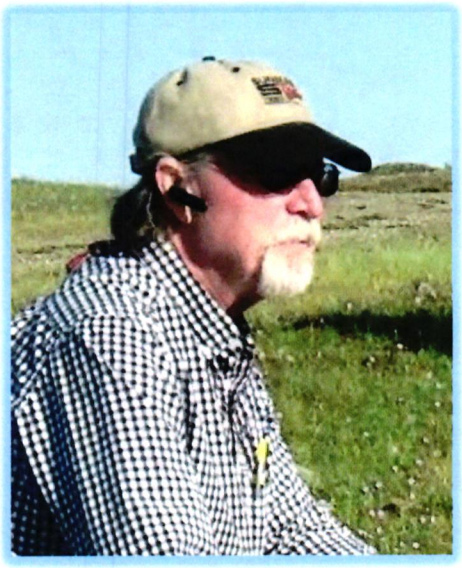
Brian Glenn

Principal Investigator/Archaeologist



Professional Experience: 30 Years

Expertise

Cultural Resources Management
California Prehistory
Section106 & CEQA Compliance
Native American Consultation
Database (Collections) Management

Education

UCLA , M.A. Anthropology, 1991
UC, Santa Barbara, B.A., Anthropology, 1986
UC, Santa Barbara, B.A., Geography, 1986
San Diego Mesa College, Certificate, GIS, 2010

Professional Registrations

RPA, No. 989903

Professional Memberships

Society for California Archaeology
Society for American Archaeology
San Diego County Archaeological Society
President, 1999

Summary of Qualifications

Mr. Glenn has worked on hundreds of cultural resources management projects over his 30 year career. This includes projects throughout California in compliance with Section 106 of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA). He is listed on the RPA and meets the Secretary of Interior Standards for Principal Investigator. His recent experience includes cultural resources surveys and studies for clients such as the Los Angeles Department of Water and Power, Metropolitan Transit Authority, and La Plaza Foundation. His responsibilities have included the preparation of technical reports (assessment, evaluation, and mitigation), cultural resources management plans and EIS/EIR sections, as well as archaeological monitoring. He has training and significant experience in lithic, faunal, typological and spatial analyses, as well as obsidian source and hydration studies. He has identified, evaluated, and investigated historic era resources from a 1792 Spanish gun emplacement on Ballast Point overlook San Diego Bay to late 19th to mid-20th century household and commercial deposits. Mr. Glenn received B.A. degrees in Geography and Anthropology from UC, Santa Barbara and an M.A. in Archaeology from UCLA. During his graduate work at UCLA, he was acting coordinator of the SCCIC (CHRIS).

Selected Project Experience

First Solar Energy Blythe #1, City of Blythe, CA

Mr. Glenn supervised construction monitoring of the 200-acre solar project in Blythe. CA and prepared the Phase IV report for the County of Riverside. A single historic era dump site was located, recorded and reported.

Hammock Project, SCE, County of Riverside, CA

Conducted a cultural resources assessment of a two-mile section of transmission line in anticipation of upgrades.

Arbor Ridge, Beaumont, CA

Conducted a Phase I cultural resources assessment of a 1,200-acre project area in Beaumont, Riverside County that included historic archives review, pedestrian survey and paleontological literature review for SunCal Development/City of Beaumont.

MWD of Southern California Potholing Project. County of Riverside, CA

Conducted a pedestrian survey of six proposed potholing locations directly adjacent to the Colorado River Aqueduct for the Metropolitan Water District of Southern California.

DUKE CRM

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Morgan Bender

Archaeologist

Professional Experience: 4 Years

Expertise

Cultural Resources Management
California Prehistory
Historical Archaeology
Prehistoric Archaeology

Education

California State University, Los Angeles, M.A. Anthropology, 2019
Agnes Scott College, B.A., Anthropology/ Sociology, 2014

Professional Registrations

RPA, No. 18011

Professional Memberships

Society for California Archaeology
Society for American Archaeology

Professional Experience

Ms. Bender attended Agnes Scott College in Decatur, Georgia where she obtained her BA in 2014 in Anthropology/ Sociology and minored in Classical Studies. During her time there, she studied abroad and traveled throughout Turkey where she visited many archaeological sites. Ms. Bender attended California State University, Los Angeles where she received her MA in Anthropology, emphasis in California Archaeology in 2019. Her thesis focused on tracking climatic shifts using crab and sea urchin remains from a Middle Holocene site on San Nicolas Island, California (CA-SNI-40). She has four years of professional experience as a staff archaeologist where she became a Registered Professional Archaeologist. During this time, she has monitored major infrastructure sites such as Metro and utility projects as well as private commercial and residential developments projects. While monitoring, she identifies historic and prehistoric resources and is cross trained in paleontology. Additionally, she prepares the necessary DPR and archaeological reports for these finds. She has also surveyed sites in Arizona and California. Ms. Bender partook in the Woolsey Fire reconnaissance work with Cardno and Southern California Edison. She has training and significant experience in faunal and shellfish analysis, and lithic identification.

Selected Project Experience

San Marcos Creek Project, San Marcos 2021.
Metro Purple Line Section 3, West Los Angeles 2019-2021.
I-405 Project, Orange County 2020-2021.
ICF Metro Division 20, Los Angeles 2019-2021.
ICF Metro Regional Connector, Los Angeles 2017-2021.
Southern California Edison, Los Angeles and Ventura Counties, 2019-2021.
Moorefield French Valley, Murrieta 2020.
Caltrans Collection, Redlands 2019.
Stanton Energy Reliability Center, Stanton 2019.
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Appendix B

Cultural Resources Records Search

Confidential Appendix:
Not for Public Review

Appendix C

Native American Heritage Commission Sacred Lands File Check

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

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Luiseño

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Kumeyaay

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NAHC HEADQUARTERS
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Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 29, 2022

Brian Glenn
Duke CRM

Via Email to: BrianGlenn@DukeCRM.com

Re: Eucalyptus HUD (C-0366) Project, Riverside County

Dear Mr. Glenn:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

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

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Riverside County
7/29/2022

Agua Caliente Band of Cahuilla Indians
Reid Milanovich, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6800
Fax: (760) 699-6919
laviles@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161
hhaines@augustinetribe.com

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
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Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880
jstapp@cabazonindians-nsn.gov

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Los Coyotes Band of Cahuilla and Cupeño Indians
Ray Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712

Morongo Band of Mission Indians
Ann Brierty, THPO
12700 Pumarra Road — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 755 - 5259
Fax: (951) 572-6004
abrierty@morongo-nsn.gov

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 755 - 5110
Fax: (951) 755-5177
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Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pechanga Band of Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Eucalyptus HUD (C-0366) Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
7/29/2022

Pechanga Band of Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer
P.O. Box 1899 — Quechan
Yuma, AZ, 85366
Phone: (760) 572 - 2423
historicpreservation@quechantribe.com

Quechan Tribe of the Fort Yuma Reservation
Manfred Scott, Acting Chairman
Kw'ts'an Cultural Committee
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Yuma, AZ, 85366
Phone: (928) 750 - 2516
scottmanfred@yahoo.com

Ramona Band of Cahuilla
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramona-nsn.gov

Ramona Band of Cahuilla
John Gomez, Environmental Coordinator
P. O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramona-nsn.gov

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

San Manuel Band of Mission Indians
Jessica Mauck, Director of Cultural Resources
26569 Community Center Drive — Serrano
Highland, CA, 92346
Phone: (909) 864 - 8933
Jessica.Mauck@sanmanuel-nsn.gov

Santa Rosa Band of Cahuilla Indians
Lovina Redner, Tribal Chair
P.O. Box 391820 — Cahuilla
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Phone: (951) 659 - 2700
Fax: (951) 659-2228
lsaul@santarosa-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
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Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Eucalyptus HUD (C-0366) Project, Riverside County.

Torres-Martinez Desert Cahuilla Indians
Cultural Committee,
P.O. Box 1160
Thermal, CA, 92274
Phone: (760) 397 - 0300
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Cultural-Committee@torresmartinez-nsn.gov

Cahuilla

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Eucalyptus HUD (C-0366) Project, Riverside County.

APPENDIX C
Eucalyptus HUD Project Letter, Agua Caliente Band of Cahuilla Indians

February 2023

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-024-2022-019

February 02, 2023

[VIA EMAIL TO:claudiam@moval.org]
City of Moreno Valley
Ms. Claudia Manrique
141777 Fredrick Street, P.O. Box 88005
Moreno Valley, CA 92552

Re: Eucalyptus HUD Project

Dear Ms. Claudia Manrique,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Eucalyptus Affordable Housing Development project. We have reviewed the documents and have the following comments:

> *At this time the concerns of the ACBCI THPO have been addressed and proper mitigation measures have been proposed to ensure the protection of tribal cultural resources. This letter shall conclude our AB52 consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 423-3485. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Xitlaly Madrigal
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

APPENDIX D
Eucalyptus Residential Neighborhood Construction Noise Impact Analysis City of Moreno Valley

February 2023

URBAN CROSSROADS

Eucalyptus Residential Neighborhood

CONSTRUCTION NOISE IMPACT ANALYSIS

CITY OF MORENO VALLEY

PREPARED BY:

William Maddux
bmaddux@urbanxroads.com
(619) 778-1971

AUGUST 4, 2021

TABLE OF CONTENTS

APPENDICES

APPENDIX 6.1: CADNAA CONSTRUCTION NOISE MODEL INPUTS

LIST OF EXHIBITS

LIST OF TABLES

LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
ANSI	American National Standards Institute
Calveno	California Vehicle Noise
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
dBA	A-weighted decibels
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
INCE	Institute of Noise Control Engineering
L_{eq}	Equivalent continuous (average) sound level
mph	Miles per hour
OPR	Office of Planning and Research
PPV	Peak particle velocity
Project	Eucalyptus Residential Neighborhood
REMEL	Reference Energy Mean Emission Level
RMS	Root-mean-square
VdB	Vibration Decibels

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EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this construction noise study to determine the potential noise impacts due to the proposed Eucalyptus Residential Neighborhood development ("Project"). The Project site is generally located north of Eucalyptus Avenue and east of Heacock Street in the City of Moreno Valley. The Project is proposing to develop 9 affordable residential dwelling units. This noise study has been prepared to satisfy applicable City of Moreno Valley construction noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

SUMMARY OF CEQA SIGNIFICANCE FINDINGS

The results of this Eucalyptus Residential Neighborhood Construction Noise Impact Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines.(1) (1) Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any required mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report Section	Significance Findings	
		Unmitigated	Mitigated
Construction Noise	6	*Less Than Significant*	-
Construction Vibration		*Less Than Significant*	-

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1 INTRODUCTION

This noise analysis has been completed to determine the construction noise impacts associated with the development of the proposed Eucalyptus Residential Neighborhood ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The Project site is generally located north of Eucalyptus Avenue and east of Heacock Street in the City of Moreno Valley as shown on Exhibit 1-A. The proposed residential Project site is located within a residential community with existing single-family residential homes to the north, west and east. Eucalyptus Avenue is located south of the Project site.

1.2 PROJECT DESCRIPTION

The Project is proposing to develop 9 affordable dwelling units. The Project site is shown on Exhibit 1-B. The proposed residential development is considered a noise-sensitive receiving land use and is not expected to include any specific type of operational noise levels beyond the typical noise sources associated with residential land use in the Project study area.

EXHIBIT 1-A: LOCATION MAP

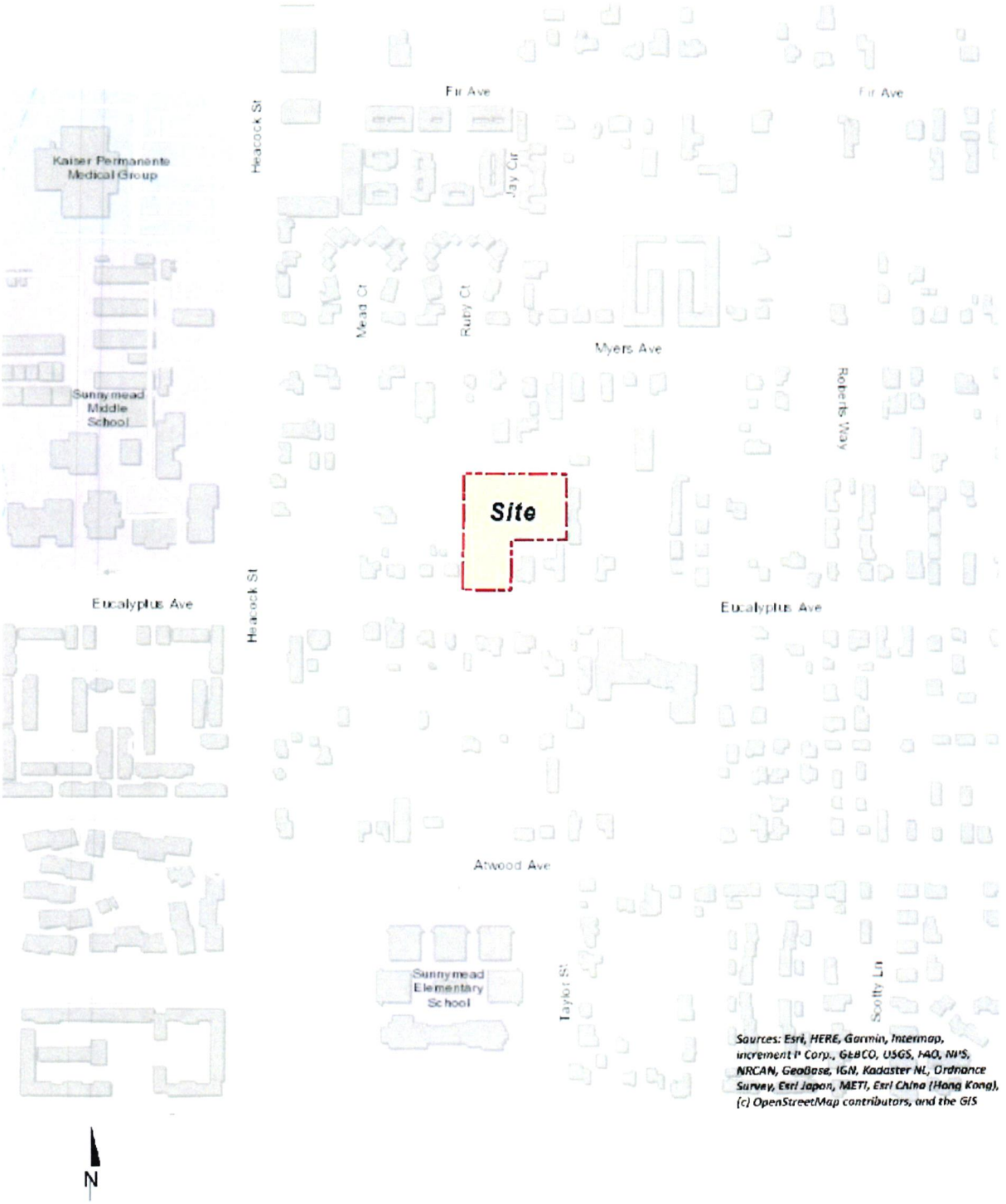

EXHIBIT 1-B: PROJECT SITE

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2 FUNDAMENTALS

Noise is simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140	INTOLERABLE OR DEAFENING	HEARING LOSS
NEAR JET ENGINE		130		
		120		
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100	VERY NOISY	
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		SPEECH INTERFERENCE
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	SLEEP DISTURBANCE
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		
QUIET SUBURBAN NIGHTTIME	LIBRARY	30	FAINT	NO EFFECT
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20		
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

Source: Environmental Protection Agency Office of Noise Abatement and Control, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004) March 1974.

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (2) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA

at approximately 100 feet, which can cause serious discomfort. (3) Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 NOISE DESCRIPTORS

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most used figure is the equivalent level (L_{eq}). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period (typically one hour) and is commonly used to describe the "energy average" noise levels within the environment.

Peak hour or equivalent noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Moreno Valley relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. Based on guidance from the U.S. Department of Transportation, Federal Highway Administration (FHWA), Office of Environment and Planning, Noise and Air Quality Branch, the way noise reduces with distance depends on the following factors.

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (2)

2.3.2 Ground Absorption

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (4)

2.3.3 Atmospheric Effects

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (2)

2.3.4 Shielding

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The Federal Highway Administration (FHWA) does not consider the planting of vegetation to be a noise abatement measure. (4)

2.3.5 Reflection

Field studies conducted by the FHWA have shown that the reflection from barriers and buildings does not substantially increase noise levels. (4) If all the noise striking a structure was reflected back to a given receiving point, the increase would be theoretically limited to 3 dBA. Further, not all the acoustical energy is reflected back to same point. Some of the energy would go over the structure, some is reflected to points other than the given receiving point, some is scattered by ground coverings (e.g., grass and other plants), and some is blocked by intervening structures and/or obstacles (e.g., the noise source itself). Additionally, some of the reflected energy is lost due to the longer path that the noise must travel. FHWA measurements made to quantify

reflective increases in traffic noise have not shown an increase of greater than 1-2 dBA; an increase that is not perceptible to the average human ear.

2.4 Noise Control

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to these three elements.

2.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by up to 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the path of the noise source. (4)

2.6 Land Use Compatibility With Noise

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (5)

2.7 Community Response to Noise

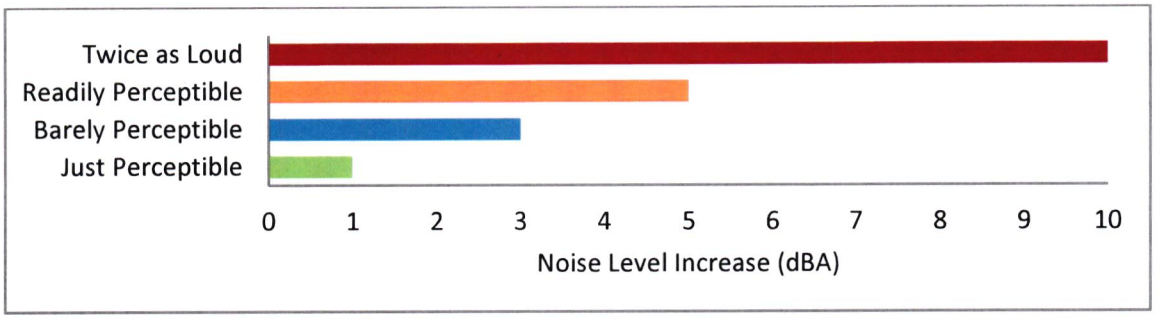
Community responses to noise varies depending upon everyone's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- Fear associated with noise producing activities.
- Socio-economic status and educational level.
- Perception that those affected are being unfairly treated.
- Attitudes regarding the usefulness of the noise-producing activity.
- Belief that the noise source can be controlled.

Approximately ten percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints will occur. Twenty-five percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. (6) Surveys have shown that about ten percent of the people exposed to

traffic noise of 60 dBA will report being highly annoyed with the noise, and each increase of one dBA is associated with approximately two percent more people being highly annoyed. When traffic noise exceeds 60 dBA or aircraft noise exceeds 55 dBA, people may begin to complain. (6) Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered *barely perceptible*, and changes of 5 dBA are considered *readily perceptible*. (4)

EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION



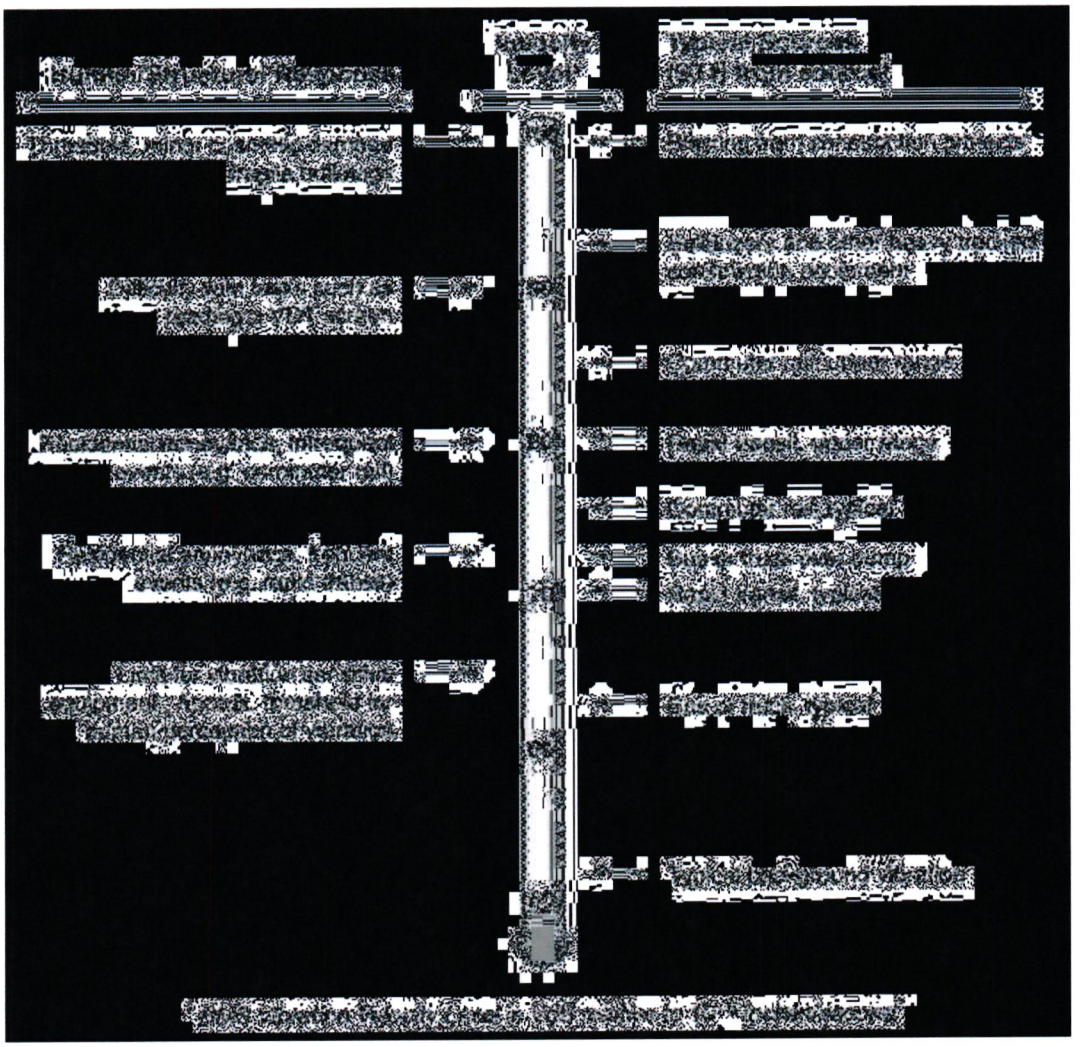
2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (7), vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Decibel notation (VdB) serves to reduce the range of numbers used to describe human response to vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment and/or activities.

The background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration.

EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION



Source: Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual.

3 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (8) The purpose of the Noise Element is to *limit the exposure of the community to excessive noise levels.* In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 CITY OF MORENO VALLEY CONSTRUCTION NOISE STANDARDS

To control noise impacts associated with the construction of the proposed Project, the City of Moreno Valley has established limits to the hours of operation. Section 11.80.030 (D)(7), *Construction and Demolition*, provides the following:

> *No person shall operate, or cause operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of eight p.m. and seven a.m. the following day such that the sound there from creates a noise disturbance, except for emergency work by public service utilities or for other work approved by the city manager or designee.*

However, neither the City's General Plan nor Municipal Code establish numeric maximum acceptable construction source noise levels for CEQA analysis purposes. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA)

Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise

environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land uses. (7 p. 179)

3.3 VIBRATION STANDARDS

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. (7)

To analyze vibration impacts originating from the operation and construction of the Eucalyptus Residential Neighborhood, vibration-generating activities are appropriately evaluated against standards established under a City's Municipal Code, if such standards exist. However, the City of Moreno Valley does not identify specific vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (9 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The construction vibration damage potential criteria include consideration of the building conditions. (3 p. 182) The Caltrans vibration manual indicates "older residential structures" have a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec) and a maximum acceptable transient vibration threshold of 0.5 PPV (in/sec). The existing buildings adjacent to the Project site can best be described as "older residential structures. Vibration generated by traffic is defined as continuous and vibration from a single blasting event is defined as a single transient event; however, many types of construction activities fall between a single event and a continuous source (9). Therefore, a reasonable vibration threshold for general construction activities is 0.4 PPV (in/sec).

4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (10) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

B. Generation of excessive ground-borne vibration or ground-borne noise levels?

C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

4.1 CONSTRUCTION NOISE STANDARDS (THRESHOLD A)

The FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use. (7 p. 179)

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.5, the vibration impacts originating from the construction of the Eucalyptus Residential Neighborhood, vibration-generating activities are appropriately evaluated the thresholds of significance outlined in the Caltrans *Transportation and Construction Vibration Guidance Manual,* (9 p. 38). These guidelines identify the maximum acceptable continuous vibration building damage threshold of 0.3 PPV (in/sec) for "older residential structures" and 0.5 PPV (in/sec) for transient events. While vibration from traffic is continuous and vibration from a single blasting event is a single transient event, many types of construction activities fall between a single event and a continuous source. Thus, a vibration threshold of 0.4 PPV (in/sec) is used in this noise study to assess potential impacts due to Project construction vibration levels.

4.3 EVALUATION CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix that includes the allowable criteria used to identify potentially significant incremental noise level increases.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

Analysis	Condition(s)	Significance Criteria	
		Daytime	Nighttime
Construction	Noise Level Threshold[4]	80 dBA L_{eq}	
	Vibration Level Threshold[5]	0.4 PPV (in/sec)	

[1] City of Moreno Valley General Plan Policy 6.3.1
[2] City of Moreno Valley Municipal Code, Chapter 11.80 Noise Regulation, Table 11.80.030-2
[3] FICON, 1992.
[4] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.
[5] Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

5 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 5-A, were identified as representative locations for analysis. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas.

Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location. To describe the potential off-site Project noise levels, five receiver locations in the vicinity of the Project site were identified. All distances are measured from the Project site boundary to the outdoor living areas (e.g., private backyards) or at the building façade, whichever is closer to the Project site.

R1: Location R1 represents the existing noise sensitive residence located at 24082 Eucalyptus Avenue, approximately 10 feet west of the Project site. R1 is placed in the private outdoor living areas (backyard) facing the Project site.

R2: Location R2 represents the existing noise sensitive residence located at 24130 Eucalyptus Avenue, approximately 20 feet east of the Project site. R2 is placed in the private outdoor living areas (backyard) facing the Project site.

R3: Location R3 represents the existing noise sensitive residence located at 24160 Eucalyptus Avenue, approximately 39 feet east of the Project site. R3 is placed at the outdoor living areas (backyard) facing the Project site.

R4: Location R4 represents the existing noise sensitive multiple family residences located at 14170 Eucalyptus Avenue, approximately 10 feet east of the Project site. R2 is placed in the building façade facing the Project site.

R5: Location R5 represents the existing noise sensitive multiple-family residences located at 24130 Eucalyptus Avenue, approximately 73 feet north of the Project site. R2 is placed in the private outdoor living areas (backyard) facing the Project site.

EXHIBIT 5-A: RECEIVER LOCATIONS

LEGEND:

N

Receiver Locations

Site Boundary

Distance from receiver to Project site boundary (in feet)

6 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 6-A shows the construction noise source locations in relation to the nearby sensitive receiver locations previously described in Section 5. To prevent high levels of construction noise from impacting noise-sensitive land uses, Section 11.80.030 (D)(7), of the City of Moreno Valley Municipal Code limits construction activities to the hours from 7:00 a.m. to 8:00 p.m.

6.1 CONSTRUCTION NOISE LEVELS

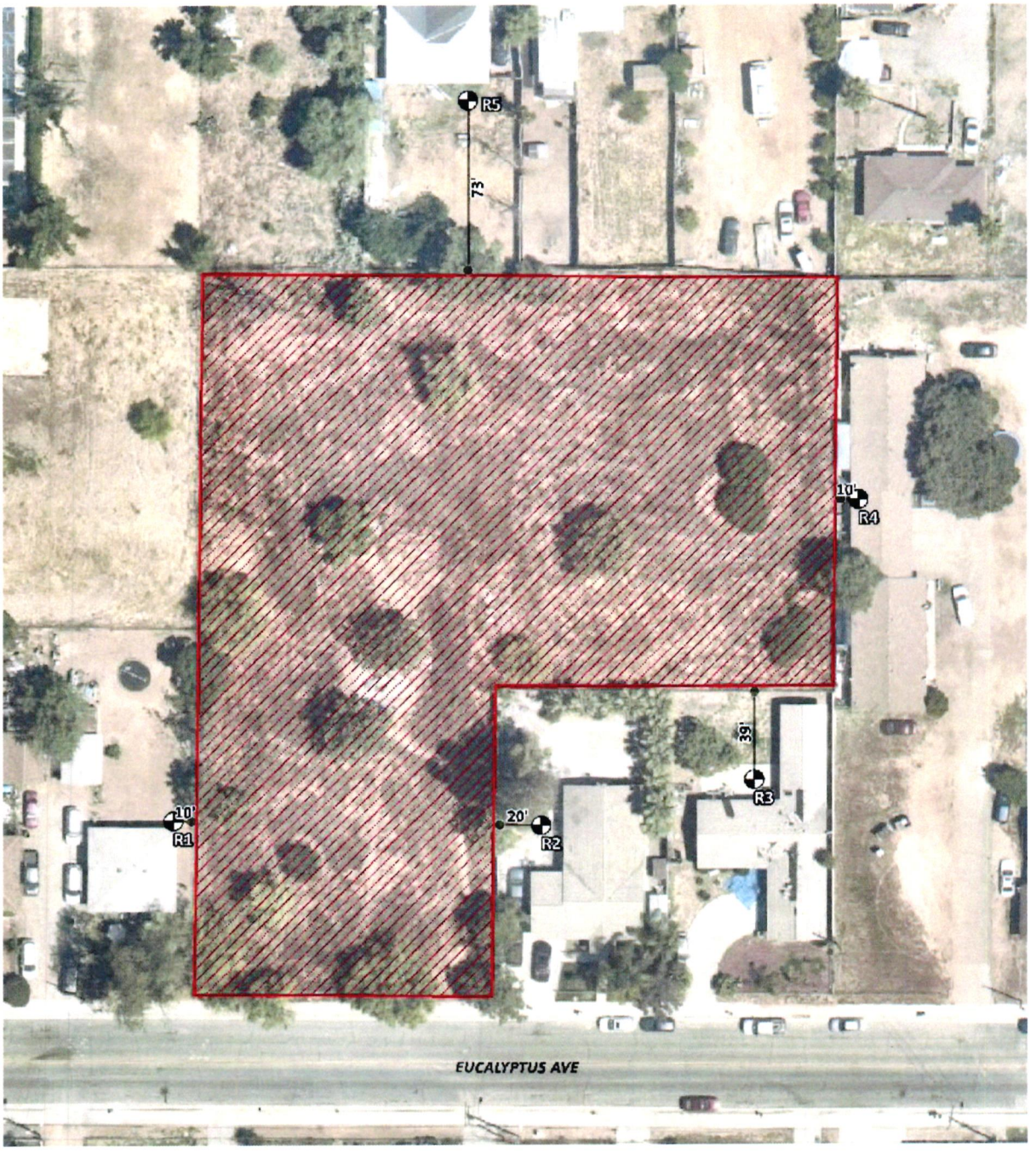
Noise generated by the Project construction equipment will include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high levels. The number and mix of construction equipment are expected to occur in the following stages:

- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

6.2 CONSTRUCTION REFERENCE NOISE LEVELS

To describe peak construction noise activities, this construction noise analysis was prepared using reference noise level measurements published in the Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA). (11). The DEFRA database provides the most recent and comprehensive source of reference construction noise levels. Table 6-1 provides a summary of the DEFRA construction reference noise level measurements expressed in hourly average dBA L_{eq} using the estimated FHWA Roadway Construction Noise Model (RCNM) usage factors (12) to describe the typical construction activities for each stage of Project construction.

EXHIBIT 6-A: TYPICAL CONSTRUCTION NOISE SOURCE LOCATIONS



N

LEGEND:

Receiver Locations

Distance from receiver to Project site boundary (in feet)

TABLE 6-1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Activity[1]	Reference Noise Level @ 50 Feet (dBA L_{eq})[1]	Highest Reference Noise Level (dBA L_{eq})
Site Preparation	Crawler Tractors	77.0	77.0
	Hauling Trucks	71.0	
	Rubber Tired Dozers	71.0	
Grading	Graders	79.0	79.0
	Excavators	64.0	
	Compactors	67.0	
Building Construction	Cranes	67.0	72.0
	Tractors	72.0	
	Welders	65.0	
Paving	Pavers	70.0	70.0
	Paving Equipment	69.0	
	Rollers	69.0	
Architectural Coating	Cranes	67.0	67.0
	Air Compressors	67.0	
	Generator Sets	67.0	

[1] Update of Noise Database for Prediction of Noise on Construction and Open Sites by the Department for Environment, Food and Rural Affairs (DEFRA) expressed in hourly average L_{eq} based on estimated usage factors from the FHWA Roadway Construction Noise Model (RCNM).

6.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. To assess the worst-case construction noise levels, the Project construction noise analysis relies on the highest noise level impacts when the equipment with the highest reference noise level is operating at the closest point from the edge of primary construction activity (Project site boundary) to each receiver location. As shown on Table 6-2, the highest construction noise levels are expected to range from 70.7 to 77.5 dBA L_{eq} at the nearest receiver locations. Appendix 6.1 includes the detailed CadnaA construction noise model inputs.

The construction noise analysis presents a conservative approach with the highest noise-level-producing equipment for each stage of Project construction operating at the closest point from primary construction activity to the nearby sensitive receiver locations. This scenario is unlikely to occur during typical construction activities and likely overstates the construction noise levels which will be experienced at each receiver location.

TABLE 6-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})					
	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels[2]
R1	75.2	77.2	70.2	68.2	65.2	77.2
R2	73.9	75.9	68.9	66.9	63.9	75.9
R3	71.0	73.0	66.0	64.0	61.0	73.0
R4	75.5	77.5	70.5	68.5	65.5	77.5
R5	68.7	70.7	63.7	61.7	58.7	70.7

[1] Noise receiver locations are shown on Exhibit 6-A.
[2] Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 6.1.

6.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project will generate potentially significant short-term noise levels at nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will satisfy the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 6-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

TABLE 6-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

Receiver Location[1]	Construction Noise Levels (dBA L_{eq})		
	Highest Construction Noise Levels[2]	Threshold[3]	Threshold Exceeded?[4]
R1	77.2	80	No
R2	75.9	80	No
R3	73.0	80	No
R4	77.5	80	No
R5	70.7	80	No

[1] Noise receiver locations are shown on Exhibit 6-A.
[2] Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 6-2.
[3] Construction noise level thresholds as shown on Table 4-1.
[4] Do the estimated Project construction noise levels exceed the construction noise level threshold?

6.5 CONSTRUCTION VIBRATION IMPACTS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. It is expected that ground-borne vibration from Project construction activities would cause only intermittent, localized intrusion. Ground-borne vibration levels resulting from typical construction activities occurring within the Project site were estimated by using data published by the Federal Transit Administration (FTA). (7) However, while vehicular traffic is rarely perceptible, construction has the potential to result in varying degrees of temporary ground vibration, depending on the specific construction activities and equipment used. Ground vibration levels associated with various types of construction equipment are summarized on Table 6-4. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by the FTA. To describe the human response (annoyance) associated with vibration impacts the FTA provides the following equation: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

TABLE 6-4: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Loaded Trucks	0.076
Large bulldozer	0.089

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Using the vibration source level of construction equipment provided on Table 6-4 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 6-5 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 10 to 39 feet from the Project construction activities, construction vibration velocity levels are estimated to range from 0.018 to 0.352 in/sec PPV. Based on maximum acceptable vibration threshold of 0.4 PPV (in/sec) for older residential buildings, the typical Project construction vibration levels will satisfy the building damage thresholds at all receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during the construction activities at the Project site.

In addition, the typical construction vibration levels at the nearest sensitive receiver locations are unlikely to be sustained during the entire construction period but will occur rather only during the times that heavy construction equipment is operating adjacent to the Project site boundaries.

TABLE 6-5: PROJECT CONSTRUCTION VIBRATION LEVELS

Receiver[1]	Distance to Const. Activity (Feet)[2]	Typical Construction Vibration Levels PPV (in/sec)[3]				Thresholds PPV (in/sec)[4]	Thresholds Exceeded?[5]
		Small bulldozer	Loaded Trucks	Large bulldozer	Highest Vibration Level		
R1	10'	0.012	0.300	0.352	0.352	0.4	No
R2	20'	0.004	0.106	0.124	0.124	0.4	No
R3	39'	0.002	0.039	0.046	0.046	0.4	No
R4	10'	0.012	0.300	0.352	0.352	0.4	No
R5	73'	0.001	0.015	0.018	0.018	0.4	No

[1] Receiver locations are shown on Exhibit 6-A.
[2] Distance from receiver location to Project construction boundary (Project site boundary).
[3] Based on the Vibration Source Levels of Construction Equipment (Table 6-4).
[4] Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Tables 19, p. 38.
[5] Does the peak vibration exceed the acceptable vibration thresholds?
"PPV" = Peak Particle Velocity

7 REFERENCES

1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
2. **California Department of Transportation Environmental Program.** *Technical Noise Supplement - A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA : s.n., September 2013.
3. **Environmental Protection Agency Office of Noise Abatement and Control.** *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974. EPA/ONAC 550/9/74-004.
4. **U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch.** *Highway Traffic Noise Analysis and Abatement Policy and Guidance.* December 2011.
5. **U.S. Department of Transportation, Federal Highway Administration.** *Highway Traffic Noise in the United States, Problem and Response.* April 2000. p. 3.
6. **U.S. Environmental Protection Agency Office of Noise Abatement and Control.** *Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise.* October 1979 (revised July 1981). EPA 550/9/82/106.
7. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment Manual.* September 2018.
8. **Office of Planning and Research.** *State of California General Plan Guidelines.* October 2017.
9. **California Department of Transportation.** *Transportation and Construction Vibration Guidance Manual.* April 2020.
10. **Council on Environmental Quality.** *National Environmental Policy Act Implementing Regulations.* 2020.
11. **Department of Environment, Food and Rural Affiars (Defra).** *Update of Noise Database for Prediction of Noise on Construction and Open Sites.* 2004.
12. **FHWA.** *Roadway Construction Noise Model.* January 2006.

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8 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Eucalyptus Residential Neighborhood Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (619) 788-1971.

William Maddux
Senior Associate
URBAN CROSSROADS, INC.
(619) 788-1971
bmaddux@urbanxroads.com

EDUCATION

Bachelor of Science in Urban and Regional Planning
California Polytechnic State University, Pomona • June 2000

PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America
APA – American Planning Association
AWMA – Air and Waste Management Association

PROFESSIONAL CERTIFICATIONS

Approved Acoustical Consultant • County of San Diego
FHWA Traffic Noise Model of Training • November 2004
CadnaA Basic and Advanced Training Certificate • October 2008.

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APPENDIX 6.1:

CADNAA CONSTRUCTION NOISE MODEL INPUTS

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CadnaA Noise Prediction Model: 13926-03_Construction.cna
Date: 04.08.21
Analyst:

Calculation Configuration

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
			Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	77.2	70.2	80.0	0.0				5.00	a	6260740.13	2284193.94	5.00
RECEIVERS		R2	75.9	68.9	80.0	0.0				5.00	a	6260890.39	2284214.64	5.00
RECEIVERS		R3	73.0	66.0	80.0	0.0				5.00	a	6260978.77	2284233.85	5.00
RECEIVERS		R4	77.5	70.5	80.0	0.0				5.00	a	6261018.99	2284353.96	5.00
RECEIVERS		R5	70.7	63.7	80.0	0.0				5.00	a	6260860.07	2284516.59	5.00

Area Source(s)

Name	M.	ID	Result. PWL			Result. PWL"			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq
			Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night		
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft^2)		(min)	(min)	(min)	(dB)	(Hz)
ConstructionArea		ConstructionArea00001	116.5	114.5	109.5	79.0	77.0	72.0	Lw"	79		0.0	-2.0	-7.0							0.0	50

Name	Height				Coordinates			
	Begin		End		x	y	z	Ground
	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
ConstructionArea	8.00	a			6260746.42	2284144.45	8.00	0.00
					6260750.04	2284444.53	8.00	0.00
					6261013.43	2284442.52	8.00	0.00
					6261011.44	2284272.38	8.00	0.00
					6260871.42	2284272.92	8.00	0.00

Name	Height		Coordinates			
	Begin	End	x	y	z	Ground
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
			6260869.92	2284143.46	8.00	0.00

Barrier(s)

Name	M.	ID	Absorption		Z-Ext.	Cantilever		Height			Coordinates			
			left	right		horz.	vert.	Begin		End	x	y	z	Ground
					(ft)	(ft)	(ft)	(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
BARRIERTEMP		0						0.00	a		6261011.44	2284272.38	0.00	0.00
											6261013.43	2284442.52	0.00	0.00
BARRIERTEMP		0						0.00	a		6260746.42	2284144.45	0.00	0.00
											6260748.28	2284299.08	0.00	0.00

APPENDIX E
Preliminary Geotechnical Investigation, Proposed Residential Development, APN 481-270-058, Moreno Valley, California

February 2023

LOR GEOTECHNICAL GROUP, INC.
Soil Engineering ▲ Geology ▲ Environmental

June 27, 2022

CASC Engineering & Consulting
1470 E. Cooley Drive
Colton, California 92324

Project No. 33736.1

Attention: Ms. Serena Dudas

Subject: Preliminary Geotechnical Investigation, Proposed Residential Development, APN 481-270-058, Moreno Valley, California.

LOR Geotechnical Group, Inc., is pleased to present this report summarizing our geotechnical investigation for the above referenced project. In summary, it is our opinion that the proposed development is feasible from a geotechnical perspective, provided the recommendations presented in the attached report are incorporated into design and construction.

To provide adequate support for the proposed residential structures, we recommend that a compacted fill mat be constructed beneath footings and slabs. The compacted fill mat will provide a dense, high-strength soil layer to uniformly distribute the anticipated foundation loads over the underlying soils. All undocumented fill material and any loose older alluvial materials should be removed from structural areas and areas to receive engineered compacted fill. The data developed during this investigation indicates that removals on the order of approximately 2 to 3 feet will be required within much of the currently planned development areas. However, locally deeper removals as in the area of our exploratory boring, B-1, and possibly in areas impacted through previous site development, should be anticipated. The given removal depths are preliminary, and the actual depths of the removals should be determined during the grading operation by observation and in-place density testing.

Low expansion potential, fair R-value quality, and a negligible soluble sulfate content generally characterize the onsite soil materials tested.

LOR Geotechnical Group, Inc.

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INTRODUCTION

During July and August of 2021, a Preliminary Geotechnical Investigation was performed by LOR Geotechnical Group, Inc., for proposed residential development of APN 481-270-058 in the City of Moreno Valley, California. Prior to completion of this report, the project was put on hold, hence the time lapse between the majority of our work and the date of this report. The purpose of this investigation was to conduct a technical evaluation of the geologic setting of the site and to provide geotechnical design recommendations for the proposed improvements. The scope of our services included:

- Review of available geotechnical literature, reports, maps, and agency information pertinent to the study area;
- Interpretation of aerial photographs of the site and surrounding regions dated 1966 through 2020;
- Geologic field reconnaissance mapping to verify the areal distribution of earth units and significance of surficial features as compiled from documents, literature, and reports reviewed;
- A subsurface field investigation to determine the physical soil conditions pertinent to the proposed development;
- Laboratory testing of selected soil samples obtained during the field investigation;
- Development of geotechnical recommendations for site grading and foundation design; and
- Preparation of this report summarizing our findings, and providing conclusions and recommendations for site development.

The approximate location of the site is shown on the attached Index Map, Enclosure A-1, within Appendix A.

To orient our investigation at the site, an image from Google Earth with the parcel overlain was utilized as a base map for our field investigation and is presented as Enclosure A-2, within Appendix A.

PROJECT CONSIDERATIONS

Information furnished to this firm indicates that the proposed project will consist of the construction of 7 single-family residences with associated roadway and landscaping improvements. Light to moderate foundation loads are anticipated with such structures.

Grading plans are not yet available. However, based on the topography of the site and adjacent properties, cuts and fills less than a few feet are anticipated to be necessary to create the proposed building pads.

EXISTING SITE CONDITIONS

The subject site consists of an irregular shaped, relatively flat, vacant area of land that is approximately 1.5 acres in size. At the time of our field investigation and on June 22, 2022, vegetation on the site consisted of a light growth of weeds with a few scattered re-growth trees. The topography of the site is planar, with a gentle fall toward the south. Existing residential properties surround the site on all sides with Eucalyptus Avenue present along the south side of the site.

AERIAL PHOTOGRAPH ANALYSIS

The aerial photographs reviewed consisted of vertical aerial photographs of varying scales. We reviewed imagery available from Google Earth (2021) and from Historic Aerials (2021). From sometime prior to 1966 to the middle or late 1970's, the site contained several small structures, mainly within the southeast portion of the site, with a loop driveway that extended north from Eucalyptus Avenue. Although most of these were removed by the late 1970's, four concrete slabs associated with the previous development remain on the site at this time. Most of the previously existing trees that were present onsite in the past have been removed with some stumps regrowing into small, bushy trees today.

Our review of the aerial photographs did not reveal any adverse geologic conditions, such as possible faults or landslides, as being present at or within close proximity to the site.

FIELD EXPLORATION PROGRAM

Our subsurface field exploration program was conducted on July 15, 2021 and consisted of drilling 4 exploratory borings with a truck-mounted Mobile B-61 drill rig equipped with 8-inch diameter hollow stem augers. The borings were drilled to depths of approximately 26 to 31.5 feet below the existing ground surface. The approximate locations of our exploratory borings are presented on the attached Site Plan, Enclosure A-2 within Appendix A.

The subsurface conditions encountered in the exploratory borings were logged by a geologist from this firm. Relatively undisturbed and bulk samples were obtained at a maximum depth interval of 5 feet and returned to our geotechnical laboratory in sealed

containers for further testing and evaluation. A detailed description of the field exploration program and the boring logs are presented in Appendix B.

LABORATORY TESTING PROGRAM

Selected soil samples obtained during the field investigation were subjected to laboratory testing to evaluate their physical and engineering properties. Laboratory testing included in-place moisture content and dry density, laboratory compaction characteristics, direct shear, expansion index, sieve analysis, sand equivalent, R-value, and soluble sulfate content. A detailed description of the laboratory testing program and the test results are presented in Appendix C.

GEOLOGIC CONDITIONS

Regional Geologic Setting

The site is located within the south-central portion of Moreno Valley which lies within the northern end of Perris Valley. This area is located on the Perris block, within the northern Peninsular Ranges geologic province of southern California. While the Perris block is considered to be a relatively stable structural block, it is bounded by active faults. The Perris block is underlain predominately by a very large mass of crystalline igneous rocks of Cretaceous age and older metasedimentary and metavolcanic rocks.

The Perris block has a series of erosional surfaces, marked by low topographic relief and capped with unconsolidated alluvial sediments stripped from the surrounding highlands, such as the Box Spring Mountains and the hills around Lake Perris located southeast of the site. These were mapped by the California Division of Mines and Geology as being underlain by deposits of relatively unconsolidated, but weakly to moderately indurated younger to older alluvium (Morton and Matti, 2001 and Morton, 2003).

The nearest known active fault zone is the San Jacinto fault zone located approximately 7.7 kilometers (4.8 miles) to the northeast. Other major faults within the region include the San Andreas fault zone located approximately 22.4 kilometers (14.0 miles) to the northeast and the Elsinore fault zone located approximately 29.1 kilometers (18.2 miles) to the southwest. The site and the regional geologic setting are shown on Enclosure A-3 within Appendix A.

Site Geologic Conditions

Fill/Topsoil: As encountered within our exploratory borings, fill/topsoil materials on the order of 1 foot thick are present. The fill materials were noted to be comprised of silty sand which was brown, dry, and loose. These materials are most likely the result of weed abatement practices (discing). Deeper fills are anticipated at the site, primarily in the areas of previous development.

Older Alluvium: Underlying the fill materials at the site, older alluvial materials were encountered within all of our exploratory borings to the maximum depth explored. These units were noted to consist of silty sand and a minor unit of sandy silt/lean clay with sand. The older alluvial materials were in a relatively loose to medium dense state upon first encounter, becoming medium dense/very stiff to very dense/hard with depth based on our equivalent Standard Penetration Test (SPT) data and in-place density testing.

A detailed description of the subsurface soil conditions as encountered within our exploratory borings, is presented on the Boring Logs within Appendix B.

Groundwater Hydrology

No groundwater or groundwater seepage was encountered within any of our exploratory borings which extended to depths of between 26 and 31.5 feet below the existing ground surface.

Records for nearby wells which were readily available from the State of California Department of Water Resources online database (CDWR, 2021) and the Western Municipal Water District Cooperative Well Measurement Program (WMWD, 2021) were reviewed as a part of this investigation.

According to the State of California Department for Water Resources online database, two wells (Well No. 339347N1172408W001 and Well No. 3393471172403W001), both located approximately 0.25 to 0.3 kilometers (0.15 to 0.2 miles) to the northeast of the site, have recorded depths to groundwater for the time period from November, 2011 through March, 2021. In these wells, groundwater was measured as being at a depth ranging from 57 to 66 feet. Based on this information and our exploratory borings, groundwater is anticipated to be at a depth of 50 feet or more in the general site area.

Surface Runoff

Current surface runoff of precipitation waters across the site is generally as sheet flow to the south.

Mass Movement

Mass movement features such as landslides, rockfalls, or debris flows within the site vicinity are not known to exist and no evidence of mass movement was observed on the site or in the vicinity during our review of aerial photographs or reconnaissance.

Faulting

No active or potentially active faults are known to exist at the subject site. In addition, the subject site does not lie within a current State of California Earthquake Fault Zone (Hart and Bryant, 2010) nor County of Riverside earthquake fault zone (TLMA, 2022).

As previously mentioned, the closest known active fault is the San Jacinto Valley segment of the San Jacinto fault zone, located approximately 7.7 kilometers (4.8 miles) to the northeast. In addition, other relatively close active faults include the San Bernardino segment of the San Andreas fault zone located approximately 22.4 kilometers (14.0 miles) to the northeast and the Elsinore fault zone, located approximately 29.1 kilometers (18.2 miles) to the southwest.

The San Andreas fault is considered to be the major tectonic feature of California, separating the Pacific Plate and the North American Plate. While estimates vary, the San Andreas fault is generally thought to have an average slip rate on the order of 24mm/yr and capable of generating large magnitude events on the order of 7.5 or greater.

The San Jacinto fault zone is a sub-parallel branch of the San Andreas fault zone, extending from the northwestern San Bernardino area, southward into the El Centro region. This fault has been active in recent times with several large magnitude events. It is believed that the San Jacinto fault is capable of producing an earthquake magnitude on the order of 6.5 or greater.

The Elsinore fault zone is one of the largest in southern California. At its northern end it splays into two segments and at its southern end it is cut by the Yuba Wells fault. The primary sense of slip along the Elsinore fault is right lateral strike-slip. It is believed that the

Elsinore fault zone is capable of producing an earthquake magnitude on the order of 6.5 to 7.5.

Current standards of practice often include a discussion of all potential earthquake sources within a 100-kilometer (62 mile) radius. However, while there are other large earthquake faults within a 100 kilometer (62 mile) radius of the site, none of these are considered as relevant to the site due to their greater distance and/or smaller anticipated magnitudes.

Historical Seismicity

In order to obtain a general perspective of the historical seismicity of the site and surrounding region a search was conducted for seismic events at and around the area within various radii. This search was conducted utilizing the historical seismic search website of the U.S.G.S. (2021). This website conducts a search of a user selected cataloged seismic events database, within a specified radius and selected magnitudes, and then plots the events onto a map. At the time of our search, the database contained data from January 1, 1932 through July 7, 2021.

In our first search, the general seismicity of the region was analyzed by selecting an epicenter map listing all events of magnitude 4.0 and greater, recorded since 1932, within a 100 kilometer (62 mile) radius of the site, in accordance with guidelines of the California Division of Mines and Geology. This map illustrates the regional seismic history of moderate to large events. As depicted on Enclosure A-4, within Appendix A, the site lies within a relatively active region associated with San Jacinto and the San Andreas faults trending southeast to northwest.

In the second search, the micro seismicity of the area lying within a 10 kilometer (6.2 mile) radius of the site was examined by selecting an epicenter map listing events on the order of 2.0 and greater since 1978. In addition, only the "A" events, or most accurate events were selected. Caltech indicates the accuracy of the "A" events to be approximately 1 km. The results of this search is a map that presents the seismic history around the area of the site with much greater detail, not permitted on the larger map. The reason for limiting the events to the last 40± years on the detail map is to enhance the accuracy of the map. Events recorded prior the mid 1970's are generally considered to be less accurate due to advancements in technology. As depicted on this map, Enclosure A-5, the San Jacinto fault zone appear to be the source of numerous events.

In summary, the historical seismicity of the site entails numerous small to medium magnitude earthquake events occurring around the subject site, predominately associated

with the presence of the San Jacinto fault zone. Any future developments at the subject site should anticipate that moderate to large seismic events could occur very near the site.

Secondary Seismic Hazards

Other secondary seismic hazards generally associated with severe ground shaking during an earthquake include liquefaction, seiches and tsunamis, earthquake induced flooding, landsliding and rockfalls, and seismic-induced settlement.

Liquefaction: The potential for liquefaction generally occurs during strong ground shaking within loose granular sediments where the depth to groundwater is usually less than 50 feet. Given that the soils are generally dense to very dense at relatively shallow depth and that the depth to groundwater is thought to exceed 50 feet below the surface of the site, the potential for liquefaction to occur at the site is considered to be nil.

Seiches/Tsunamis: The potential for the site to be affected by a seiche or tsunami (earthquake generated wave) is considered nil due to absence of any large bodies of water near the site.

Flooding (Water Storage Facility Failure): There are no large water storage facilities located on or near the site which could possibly rupture during an earthquake and affect the site by flooding.

Seismically-Induced Landsliding: Our research, site reconnaissance and review of aerial imagery of the site and vicinity indicates that there are no known or suspected landslides at the site or in close proximity to the site and, therefore, the potential for seismically-induced landslides occurring at the site is considered very low.

Rockfalls: No large, exposed, loose or unrooted boulders that could affect the integrity of the site are present above the site.

Seismically-Induced Settlement: Settlement generally occurs within areas of loose, granular soils with relatively low density. Since the site is underlain by dense/very stiff to dense/very hard older alluvial materials, and the site is considered non-liquefiable, the potential for settlement is considered very low. In addition, the earthwork operations recommended to be conducted during the development of the site will mitigate any near surface loose soil conditions.

SOILS AND SEISMIC DESIGN CRITERIA (California Building Code 2019)

Design requirements for structures can be found within Chapter 16 of the 2019 California Building Code (CBC) based on building type, use, and/or occupancy. The classification of use and occupancy of all proposed structures at the site, shall be the responsibility of the building official.

Chapter 20 of the ASCE 7-16 defines six possible site classes for earth materials that underlie any given site. Bedrock is assigned one of three of these six site classes and these are: A, B, or C. Soil is assigned as C, D, E, or F. Per ASCE 7-16, Site Class A and Site Class B shall be measured on-site or estimated by a geotechnical engineer, engineering geologist or seismologist for competent rock with moderate fracturing and weathering. Site Class A and Site Class B shall not be used if more than 10 feet of soil is between the rock surface and bottom of the spread footing or mat foundation. Site Class C can be used for very dense soil and soft rock with $\bar{N}$ values greater than 50 blows per foot. Site Class D can be used for stiff soil with $\bar{N}$ values ranging from 15 to 50 blows per foot. Site Class E is for soft clay soils with $\bar{N}$ values less than 15 blows per foot. Our investigation, mapping by others, and our experience in the site region indicates that the materials beneath the site are considered Site Class D stiff soils.

Earthquake design criteria have been formulated in accordance with the 2019 CBC and ASCE 7-16 for the site based on the results of our investigation to determine the Site Class and an assumed Risk Category II. However, these values should be reviewed and the final design should be performed by a qualified structural engineer familiar with the region. In addition, the building official should confirm the Risk Category utilized in our design (Risk Category II). Our design values are attached within Appendix D.

CONCLUSIONS

General

This investigation provides a broad overview of the geotechnical and geologic factors which are expected to influence future site planning and development. On the basis of our field investigation and testing program, it is the opinion of LOR Geotechnical Group, Inc., that the proposed development is feasible from a geotechnical standpoint, provided the recommendations presented in this report are incorporated into design and implemented during grading and construction.

The subsurface conditions encountered in our exploratory borings are indicative of the locations explored. The subsurface conditions presented here are not to be construed as being present the same everywhere on the site. If conditions are encountered during the construction of the project which differ significantly from those presented in this report, this firm should be notified immediately so we may assess the impact to the recommendations provided.

Foundation Support

Based upon the field investigation and test data, it is our opinion that the existing fill soils and near surface natural soils will not, in their present condition, provide uniform and/or adequate support for the proposed improvements.

Left as is, this condition could cause unacceptable differential and/or overall settlements upon application of the anticipated foundation loads.

To provide adequate support for the proposed structural improvements, we recommend that a compacted fill mat be constructed beneath footings and slabs. This compacted fill mat will provide a dense, high-strength soil layer to uniformly distribute the anticipated foundation loads over the underlying soils. In addition, the construction of this compacted fill mat will allow for the removal of any undocumented fill soils and near surface natural soils that are present within the proposed building areas. Conventional foundation systems, using either individual spread footings and/or continuous wall footings, will provide adequate support for the anticipated downward and lateral loads when utilized in conjunction with the recommended fill mat.

Soil Expansiveness

Our observations, excavations, and laboratory testing indicates that the soils tested have low expansion potential. Recommendations to mitigate low expansive soils are provided within.

Careful evaluation of on-site soils and any import fill for their expansion potential should be conducted during the grading operation.

Sulfate Protection

The results of the soluble sulfate tests conducted on selected subgrade soils expected to be encountered at foundation levels indicate that there is a negligible sulfate exposure to

concrete elements in contact with the on site soils per the 2019 CBC. Therefore, no specific recommendations are given for concrete elements to be in contact with the onsite soils.

Geologic Mitigations

No special geologic recommendation methods are deemed necessary at this time, other than the geotechnical recommendations provided in the following sections.

Seismicity

Seismic ground rupture is generally considered most likely to occur along pre-existing active faults. Since no known faults are known to exist at, or project into the site, the probability of ground surface rupture occurring at the site is considered nil.

Due to the site's close proximity to the faults described above, it is reasonable to expect a strong ground motion seismic event to occur during the lifetime of the proposed development on the site. Large earthquakes could occur on other faults in the general area, but because of their lesser anticipated magnitude and/or greater distance, they are considered less significant than the faults described above from a ground motion standpoint.

The effects of ground shaking anticipated at the subject site should be mitigated by the seismic design requirements and procedures outlined in Chapter 16 of the California Building Code. However, it should be noted that the current building code requires the minimum design to allow a structure to remain standing after a seismic event, in order to allow for safe evacuation. A structure built to code may still sustain damage which might ultimately result in the demolishing of the structure (Larson and Slosson, 1992).

RECOMMENDATIONS

Geologic Recommendations

No special geologic recommendation methods are deemed necessary at this time, other than the geotechnical recommendations provided in the following sections.

General Site Grading

It is imperative that no clearing and/or grading operations be performed without the presence of a qualified geotechnical engineer. An on-site, pre-job meeting with the owner, the developer, the contractor, and geotechnical engineer should occur prior to all grading related operations. Operations undertaken at the site without the geotechnical engineer present may result in exclusions of affected areas from the final compaction report for the project.

Grading of the subject site should be performed in accordance with the following recommendations as well as applicable portions of the California Building Code, and/or applicable local ordinances.

All areas to be graded should be stripped of significant vegetation and other deleterious materials.

It is our recommendation that any existing fills under any proposed flatwork and/or paved areas be removed and replaced with engineered compacted fill. If this is not done, premature structural distress (settlement) of the flatwork and pavement may occur. Any undocumented fills encountered during grading should be completely removed and cleaned of significant deleterious materials. These may then be reused as compacted fill.

While not anticipated based on the lack of previous development at the site, cavities created by removal of undocumented fill soils and/or subsurface obstructions should be thoroughly cleaned of loose soil, organic matter and other deleterious materials, shaped to provide access for construction equipment, and backfilled as recommended in the following Engineered Compacted Fill section of this report.

Initial Site Preparation

Any and all existing uncontrolled fills and any loose/soft native older alluvial soils should be removed from structural areas and areas to receive structural fills. The data developed during this investigation indicates that removals on the order of 2 to 3 feet will be required to encounter competent older alluvium across most areas of the site. However, deeper removals may be required locally, as in the area of our exploratory boring, B-1, where removals on the order or approximately 5 feet are anticipated. In addition, because improvements in the form of concrete slabs and structures and possible underground utilities and/or sewage disposal systems associated with past site usage either are or may be present, locally deeper removals to eliminate such features may be required. Removals

should extend horizontally at a distance equal to the depth of the removals plus proposed fill and at least a minimum of 5 feet. The given removal depths are preliminary. The actual depths of the removals should be determined during the grading operation by observation and in-place density testing. Removals should expose older alluvial materials with an in-situ relative compaction of at least 85 percent (ASTM D 1557).

Preparation of Fill Areas

After the removals described above and prior to placing fill, the surfaces of all areas to receive fill should be scarified to a depth of at least 12 inches. The scarified soil should be brought to near optimum moisture content and compacted to a relative compaction of at least 90 percent (ASTM D 1557).

Engineered Compacted Fill

The on-site soils should provide adequate quality fill material, provided they are free from organic matter and other deleterious materials. Unless approved by the geotechnical engineer, rock or similar irreducible material with a maximum dimension greater than 6 inches should not be buried or placed in fills.

Import fill, if required, should be inorganic, non-expansive granular soils free from rocks or lumps greater than 6 inches in maximum dimension. Sources for import fill should be approved by the geotechnical engineer prior to their use.

Fill should be spread in maximum 8-inch uniform, loose lifts, with each lift brought to near optimum moisture content prior to, during and/or after placement, and compacted to a relative compaction of at least 90 percent in accordance with ASTM D 1557.

Based upon the relative compaction of the near surface soils determined during this investigation and the relative compaction anticipated for compacted fill soil, we estimate a compaction shrinkage factor of approximately 10 to 15 percent. Therefore, 1.10 to 1.15 cubic yards of in-place materials would be necessary to yield one cubic yard of properly compacted fill material. Subsidence is anticipated to be 0.10 feet. These values are for estimating purposes only, and are exclusive of losses due to stripping or the removal of subsurface obstructions. These values may vary due to differing conditions within the project boundaries and the limitations of this investigation. Shrinkage should be monitored during construction. If percentages vary, provisions should be made to revise final grades or adjust quantities of borrow or export.

Preparation of Foundation Areas

All footings should rest upon at least 24 inches of properly compacted fill material placed over competent alluvium. In areas where the required fill thickness is not accomplished by the recommended removals or by site rough grading, the footing areas should be further subexcavated to a depth of at least 24 inches below the proposed footing base grade, with the subexcavation extending at least 5 feet beyond the footing lines. The bottom of all excavations should be scarified to a depth of 12 inches, brought to near optimum moisture content, and recompacted to at least 90 percent relative compaction (ASTM D 1557) prior to the placement of compacted fill.

Concrete floor slabs should bear on a minimum of 24 inches of compacted soil. This should be accomplished by the recommendations provided above. The final pad surfaces should be rolled to provide smooth, dense surfaces upon which to place the concrete.

Short-Term Excavations

Following the California Occupational and Safety Health Act (CAL-OSHA) requirements, excavations 5 feet deep and greater should be sloped or shored. All excavations and shoring should conform to CAL-OSHA requirements.

Short-term excavations 5-feet deep and greater shall conform to Title 8 of the California Code of Regulations, Construction Safety Orders, Section 1504 and 1539 through 1547. Based on our exploratory borings, it appears that Type C soil is the predominant type of soil on the project and all short-term excavations should be based on this type of soil. Deviation from the standard short-term slopes are permitted using Option 4, Design by a Registered Professional Engineer (Section 1541.1).

Short-term slope construction and maintenance are the responsibility of the contractor, and should be a consideration of his methods of operation and the actual soil conditions encountered.

Slope Construction

Preliminary data indicates that cut and fill slopes should be constructed no steeper than two horizontal to one vertical. Fill slopes should be overfilled during construction and then cut back to expose fully compacted soil. A suitable alternative would be to compact the slopes during construction, then roll the final slopes to provide dense, erosion-resistant surfaces.

Slope Protection

Since the site soils are susceptible to erosion by running water, measures should be provided to prevent surface water from flowing over slope faces. Slopes at the project should be planted with a deep rooted ground cover as soon as possible after completion. The use of succulent ground covers such as iceplant or sedum is not recommended. If watering is necessary to sustain plant growth on slopes, the watering system should be monitored to assure proper operation and to prevent over watering.

Foundation Design

Since the site is underlain by low expansive soils, we recommend that the proposed structures be supported on reinforced, stiffened slab foundations resting over 24 inches of engineered compacted fill placed over competent older alluvium. The design of the slab foundation could be performed in conformance to the Wire Reinforcement Institute (WRI) method or the Post-Tensioning Institute (PTI) method.

For the application of the WRI method, a minimum effective plasticity index of 15 is recommended for foundation design. The slab thickness should be a minimum of 4 inches and should have a reinforcement of at least Asfy equal to 2,600 pounds. This could consist of #3 reinforcing bars of 60-grade steel placed at a maximum spacing of 18 inches on center, each way or equivalent. Interior stiffening concrete beams should be placed at a spacing not to exceed 25 feet. External concrete beams should be provided around the perimeter of the slab. The minimum beam dimensions should be 24 inches high and 12 inches wide, and embedded approximately 18 inches below the lowest adjacent grade. The beams should be properly reinforced to resist the movement and shears caused by the differential heave of the expansive soil. Minimum beam reinforcement should be two #5 rebars at top of beam and two #5 rebars at bottom. Stirrups may be added, particularly in the perimeter beams, to account for concentrated and exterior wall loads. These reinforcement, depth, and spacing recommendations should be considered minimum. The actual requirements for slab-on-grade foundations design and construction should be provided by a structural engineer experienced in these matters. These conditions should be verified during the site grading by additional evaluation of on-site and any imported soils for their expansion potential and plasticity characteristics.

If slab-on-grade foundations per the PTI method are proposed, the following geotechnical parameters should be used for design:

- Edge Moisture Variation Distance, em:
- Center Lift Loading Conditions: 9.0 ft
- Edge Lift Loading Conditions: 8.0 ft
- Differential Swell, ym:
- Center Lift 1.5 in
- Edge Lift 3.5 in
- Subgrade Soil Friction Coefficient, μ: 0.30

The above design parameters are based upon the data collected during our site investigation and are in general accordance with Design of Post-Tensioned Slabs-on-Ground, third edition, published by the Post-Tensioning Institute.

Where the proposed additions will be founded on conventional shallow foundations, either individual spread footings and/or continuous wall footings, bearing on a minimum of 24 inches of engineered compacted fill or entirely upon competent natural ground. All foundations should have a minimum width of 12 inches and be established a minimum of 12 inches below lowest adjacent grade.

For the minimum width and depth, spread foundations may be designed using an allowable bearing pressure of 2,000 pounds per square foot (psf). This bearing pressure may be incresed by 300 psf for each additional foot of width, and by 500 psf for each additional foot of depth, up to a maximum of 4,000 psf.

The above values are net pressures; therefore, the weight of the foundations and the backfill over the foundations may be neglected when computing dead loads. The values apply to the maximum edge pressure for foundations subjected to eccentric loads or overturning. The recommended pressures apply for the total of dead plus frequently applied live loads, and incorporate a factor of safety of at least 3.0. The allowable bearing pressures may be increased by one-third for temporary wind or seismic loading. The resultant of the combined vertical and lateral seismic loads should act within the middle one-third of the footing width. The maximum calculated edge pressure under the toe of foundations subjected to eccentric loads or over turning should not exceed the increased allowable pressure. Buildings should be setback from slopes in accordance with the California Building Code.

Resistance to lateral loads will be provided by passive earth pressure and base friction. For footings bearing against compacted fill, passive earth pressure may be considered to be developed at a rate of 300 pounds per square foot per foot of depth. Base friction may be computed at 0.30 times the normal load. Base friction and passive earth pressure may be

combined without reduction. These values are for dead load plus live load and may be increased by one-third for wind or seismic loading.

Settlement

Total settlement of individual foundations will vary depending on the width of the foundation and the actual load supported. Maximum settlement of shallow foundations designed and constructed in accordance with the preceding recommendations are estimated to be on the order of 0.5 inch. Differential settlements between adjacent footings should be about one-half of the total settlement. Settlement of all foundations is expected to occur rapidly, primarily as a result of elastic compression of supporting soils as the loads are applied, and should be essentially completed shortly after initial application of the loads.

Building Area Slab-On-Grade

To provide adequate support, concrete floor slabs-on-grade should bear on a minimum of 24 inches of engineered fill compacted soil placed and maintained at 2 to 4 percent above optimum moisture content. The final pad surfaces should be rolled to provide smooth, dense surfaces. Details for slab-on-grade design are provided in the Foundation Design section of this report.

Slabs to receive moisture-sensitive coverings should be provided with a moisture vapor barrier. This barrier may consist of an impermeable membrane. Two inches of sand over the membrane will reduce punctures and aid in obtaining a satisfactory concrete cure. The sand should be moistened just prior to placing of concrete. The slabs should be protected from rapid and excessive moisture loss which could result in slab curling. Careful attention should be given to slab curing procedures, as the site area is subject to large temperature extremes, humidity, and strong winds.

Exterior Flatwork

To provide adequate support, exterior flatwork improvements should rest on a minimum of 12 inches of soil compacted to at least 90 percent (ASTM D 1557).

Twenty-four hours prior to pouring concrete, flatwork areas should be pre-soaked to approximately 2 to 4 percent above the optimum moisture content to a minimum depth of 12-inches.

Flatwork surface should be sloped a minimum of 1 percent away from buildings and slopes, to approved drainage structures.

Wall Pressures

The design of footings for retaining structures should be performed in accordance with the recommendations described earlier under Preparation of Foundation Areas and Foundation Design. For design of retaining wall footings, the resultant of the applied loads should act in the middle one-third of the footing, and the maximum edge pressure should not exceed the basic allowable value without increase.

For design of retaining walls unrestrained against movement at the top, we recommend an active pressure of 46 pounds per square foot (psf) per foot of depth be used. This assumes level backfill consisting of recompacted, non-expansive, native soils placed against the structures and with the backcut slope extending upward from the base of the stem at 35 degrees from the vertical or flatter.

To avoid overstressing or excessive tilting during placement of backfill behind walls, heavy compaction equipment should not be allowed within the zone delineated by a 45 degree line extending from the base of the wall to the fill surface.

The backfill directly behind the walls should be compacted using light equipment such as hand operated vibrating plates and rollers. No material larger than 3-inches in diameter should be placed in direct contact with the wall.

Wall pressures should be verified prior to construction, when the actual backfill materials and conditions have been determined. Recommended pressures are applicable only to level, non-expansive, properly drained backfill (with no additional surcharge loadings). If inclined backfills are proposed, this firm should be contacted to develop appropriate active earth pressure parameters. Toe bearing pressure for non-structural walls on soils, not prepared as described earlier under Preparation of Foundation Areas, should not exceed California Building Code values.

Sulfate Protection

The results of the soluble sulfate tests conducted on selected subgrade soils expected to be encountered at foundation levels are presented on Enclosure C.

Based on the test results it appears that there is a negligible sulfate exposure to concrete elements in contact with on site soils. The CBC, therefore, does not recommend special design criteria for concrete elements in conduct with such materials.

Preliminary Pavement Design

Testing and design for preliminary pavement was conducted in accordance with the California Highway Design Manual. Based upon our preliminary sampling and testing and upon a Traffic Index shown on the City of Moreno Valley Standard Plans (2018), it appears that the structural sections tabulated below should provide satisfactory pavements for the subject pavement improvements:

AREA	T.I.	DESIGN R-VALUE	PRELIMINARY SECTION
Modified Local Street (MVSI-107B-0)	6.0	10	0.30' AC / 1.00' CAB
AC - Asphalt Concrete CAB - Crushed Aggregate Base			

The above structural sections are predicated upon 90 percent relative compaction (ASTM D 1557) of all utility trench backfills and 95 percent relative compaction (ASTM D 1557) of the upper 12 inches of pavement subgrade soils and of any aggregate base utilized. In addition, aggregate base should meet specifications for Crushed Aggregate Base.

It should be noted that all of the above pavement design was based upon the results of preliminary sampling and testing, and should be verified by additional sampling and testing during construction when the actual subgrade soils are exposed.

Construction Monitoring

Post investigative services are an important and necessary continuation of this investigation. Project plans and specifications should be reviewed by the project geotechnical consultant prior to construction to confirm that the intent of the recommendations presented herein have been incorporated into the design. Additional expansion index, R-value, and soluble sulfate testing may be required after the site is rough graded.

During construction, sufficient and timely geotechnical observation and testing should be provided to correlate the findings of this investigation with the actual subsurface conditions exposed during construction. Items requiring observation and testing include, but are not necessarily limited to, the following:

1. Site preparation-stripping and removals.

2. Excavations, including approval of the bottom of excavation prior to the processing and preparation of the bottom areas for fill placement.

3. Scarifying and recompacting prior to fill placement.

4. Subgrade preparation for pavements and slabs-on-grade.

5. Placement of engineered compacted fill and backfill, including approval of fill materials and the performance of sufficient density tests to evaluate the degree of compaction being achieved.

6. Foundation excavations.

LIMITATIONS

This report contains geotechnical conclusions and recommendations developed solely for use by CASC Engineering & Consulting and their design consultants, for the purposes described earlier. It may not contain sufficient information for other uses or the purposes of other parties. The contents should not be extrapolated to other areas or used for other facilities without consulting LOR Geotechnical Group, Inc.

The recommendations are based on interpretations of the subsurface conditions concluded from information gained from subsurface explorations and a surficial site reconnaissance. The interpretations may differ from actual subsurface conditions, which can vary horizontally and vertically across the site. If conditions are encountered during the construction of the project which differ significantly from those presented in this report, this firm should be notified immediately in order that we may assess the impact to the recommendations provided. Due to possible subsurface variations, all aspects of field construction addressed in this report should be observed and tested by the project geotechnical consultant.

If parties other than LOR Geotechnical Group, Inc., provide construction monitoring services, they must be notified that they will be required to assume responsibility for the geotechnical phase of the project being completed by concurring with the recommendations provided in this report or by providing alternative recommendations.

The report was prepared using generally accepted geotechnical engineering practices under the direction of a state licensed geotechnical engineer. No warranty, expressed or implied, is made as to conclusions and professional advice included in this report. Any persons using this report for bidding or construction purposes should perform such independent investigations as deemed necessary to satisfy themselves as to the surface and subsurface conditions to be encountered and the procedures to be used in the performance of work on this project.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Governmental Codes may occur. Due to such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a significant amount of time without a review by LOR Geotechnical Group, Inc. verifying the suitability of the conclusions and recommendations.

CLOSURE

It has been a pleasure to assist you with this project. We look forward to being of further assistance to you as construction begins. Should conditions be encountered during construction that appear to be different than indicated by this report, please contact this office immediately in order that we might evaluate their effect.

Should you have any questions regarding this report, please do not hesitate to contact our office at your convenience.

Respectfully submitted,
LOR Geotechnical Group, Inc.

Robert M. Markoff, CEG 2073
Engineering Geologist

John P. Leuer, GE 2030
President

RMM:CP:JPL/ss

Distribution: Addressee (2) and PDF via email sdudas@cascinc.com

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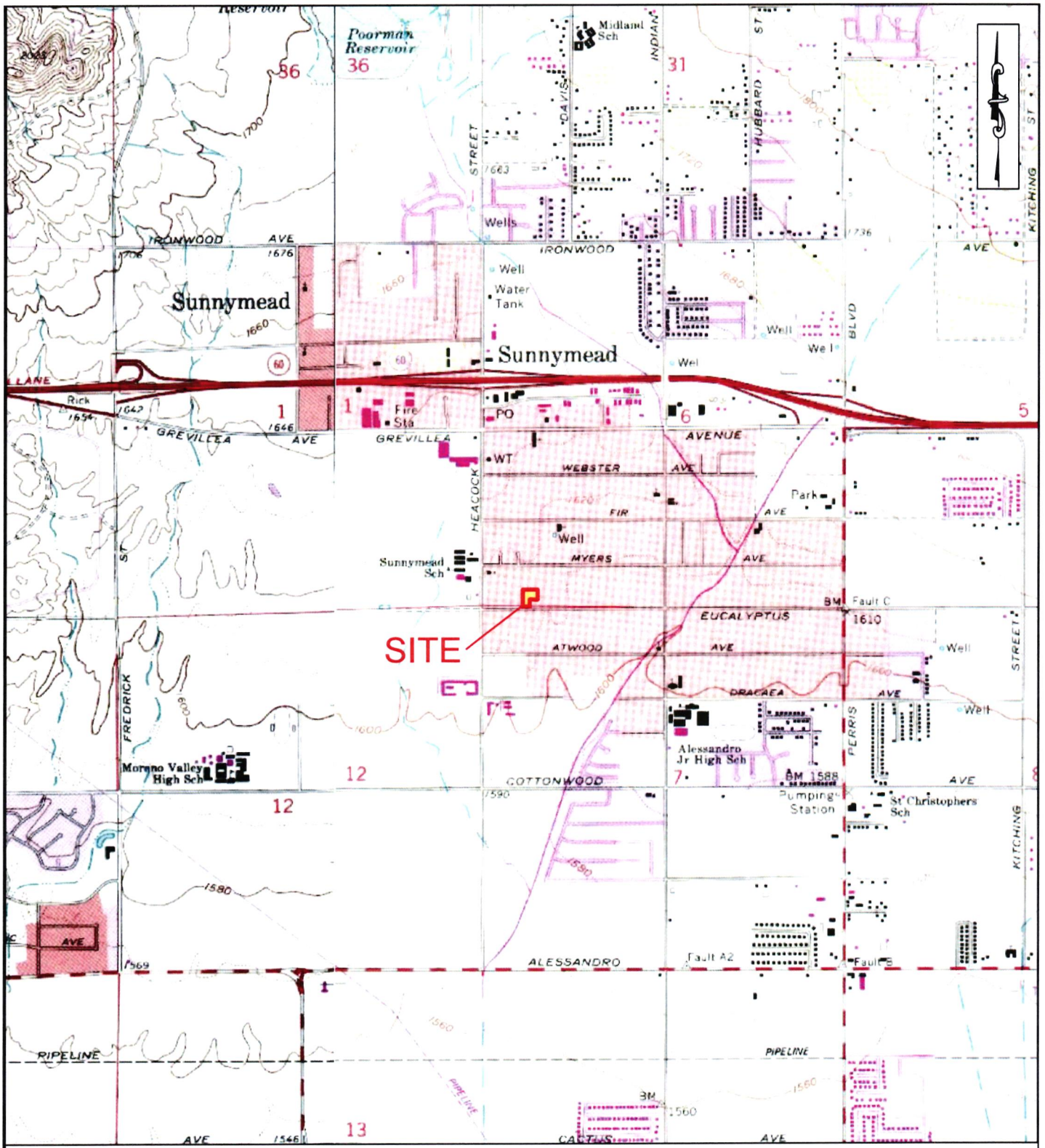
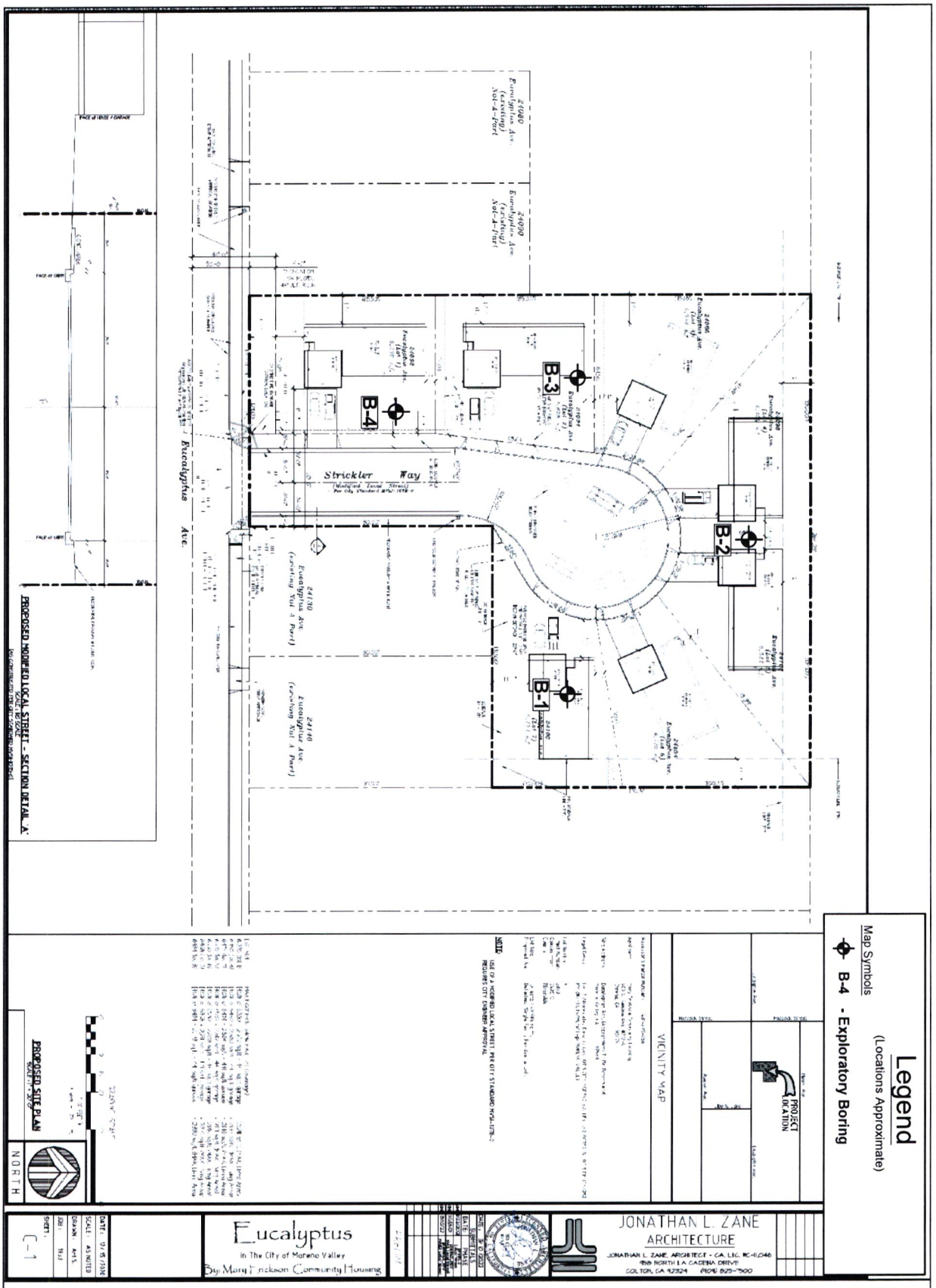
APPENDIX A

Index Map, Site Plan, Regional Geologic Map and Historical Seismicity Maps



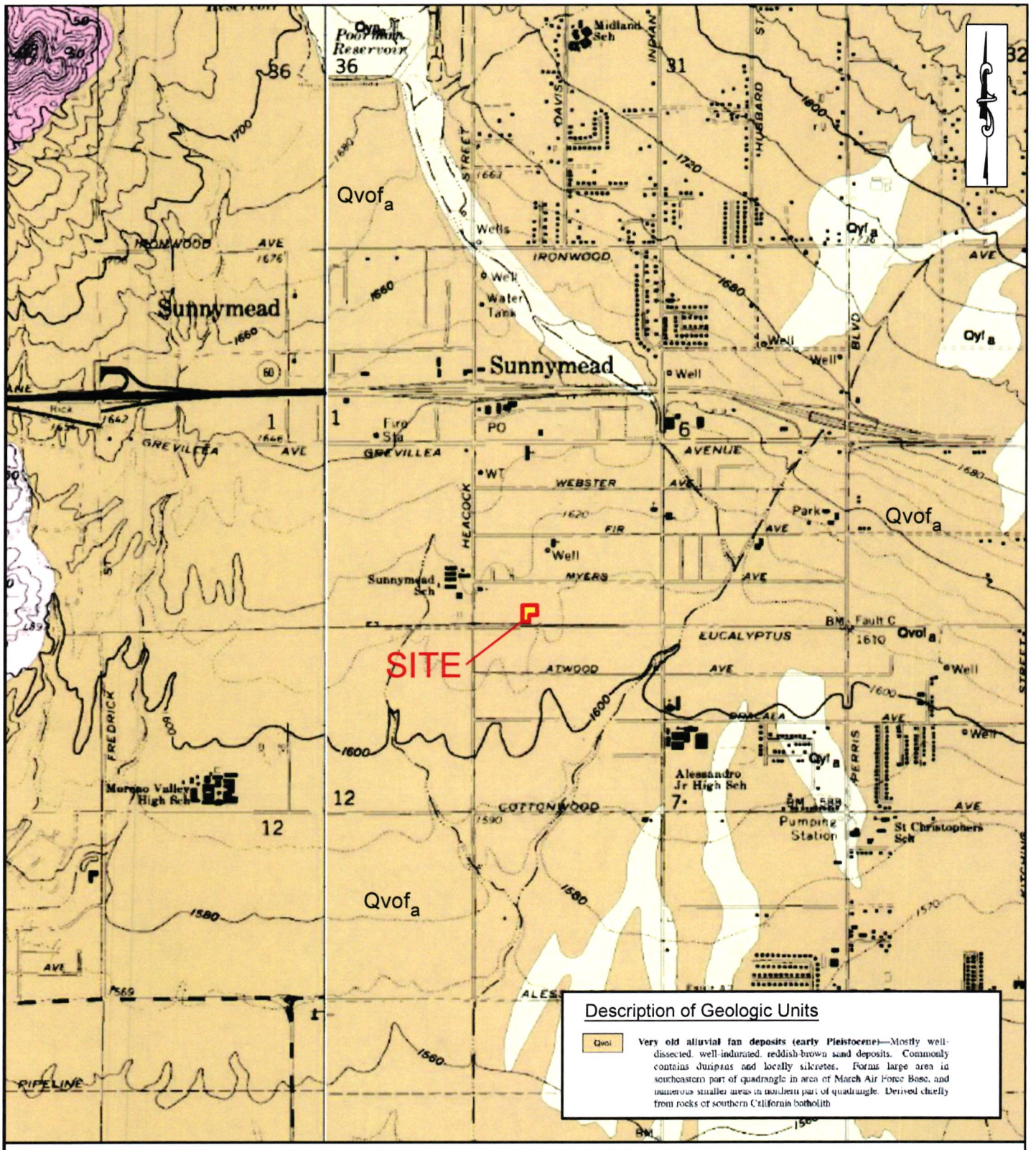
INDEX MAP

PROJECT:	APN: 481-270-058	**PROJECT NO.:**	33736.1
CLIENT:	CASC ENGINEERING AND CONSULTING	**ENCLOSURE:**	A-1
LOR GEOTECHNICAL GROUP, INC.		**DATE:**	JUNE 2022
		SCALE:	1" ≈ 2,000'



SITE PLAN

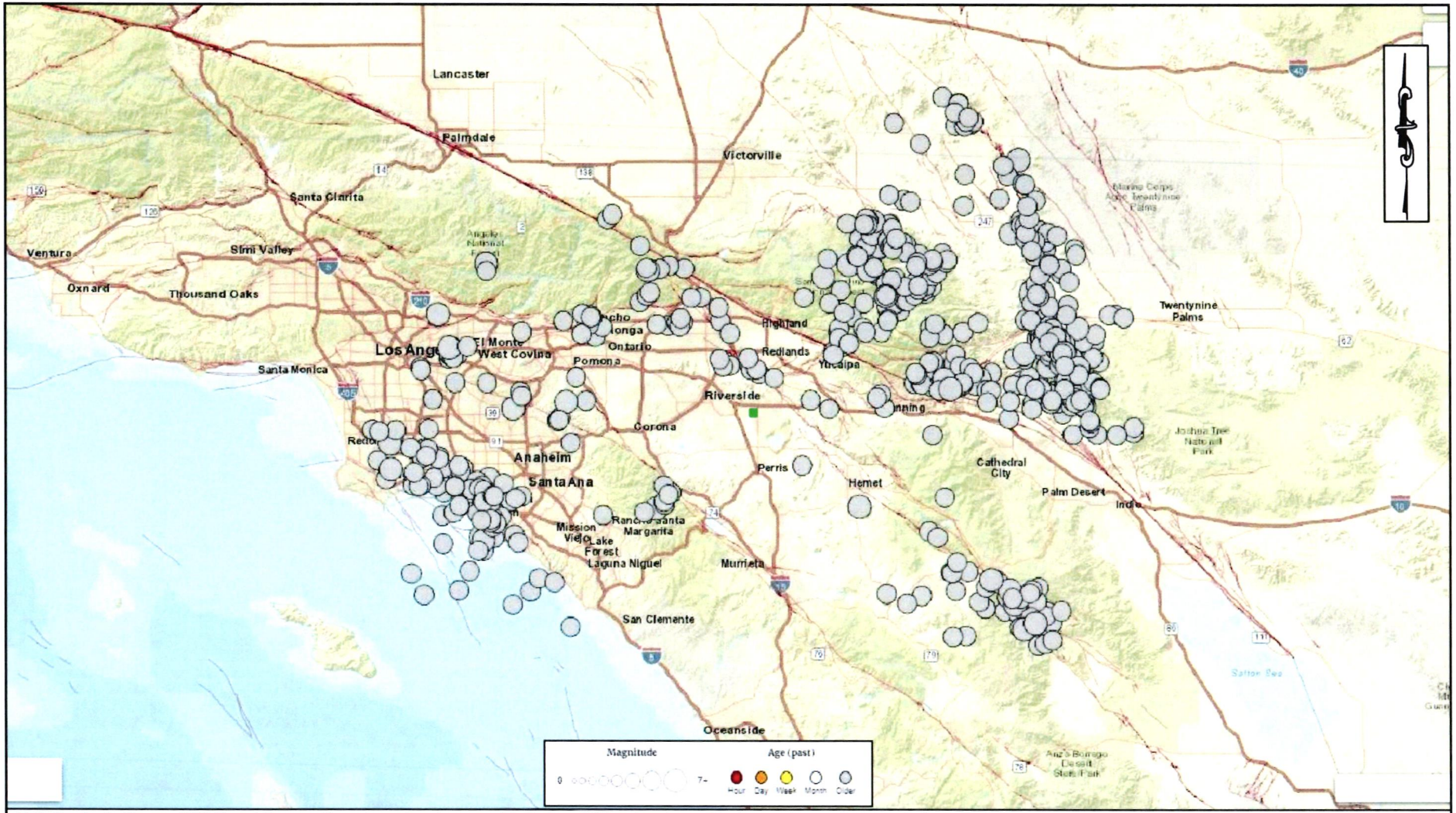
PROJECT:	APN: 481-270-058	**PROJECT NO:**	33736.1
CLIENT:	CASC ENGINEERING AND CONSULTING	**ENCLOSURE:**	A-2
LOR Geotechnical Group, Inc.		**DATE:**	JUNE 2022
		SCALE:	1" ≈ 95'



REGIONAL GEOLOGIC MAP

(Morton & Matti, 2001)

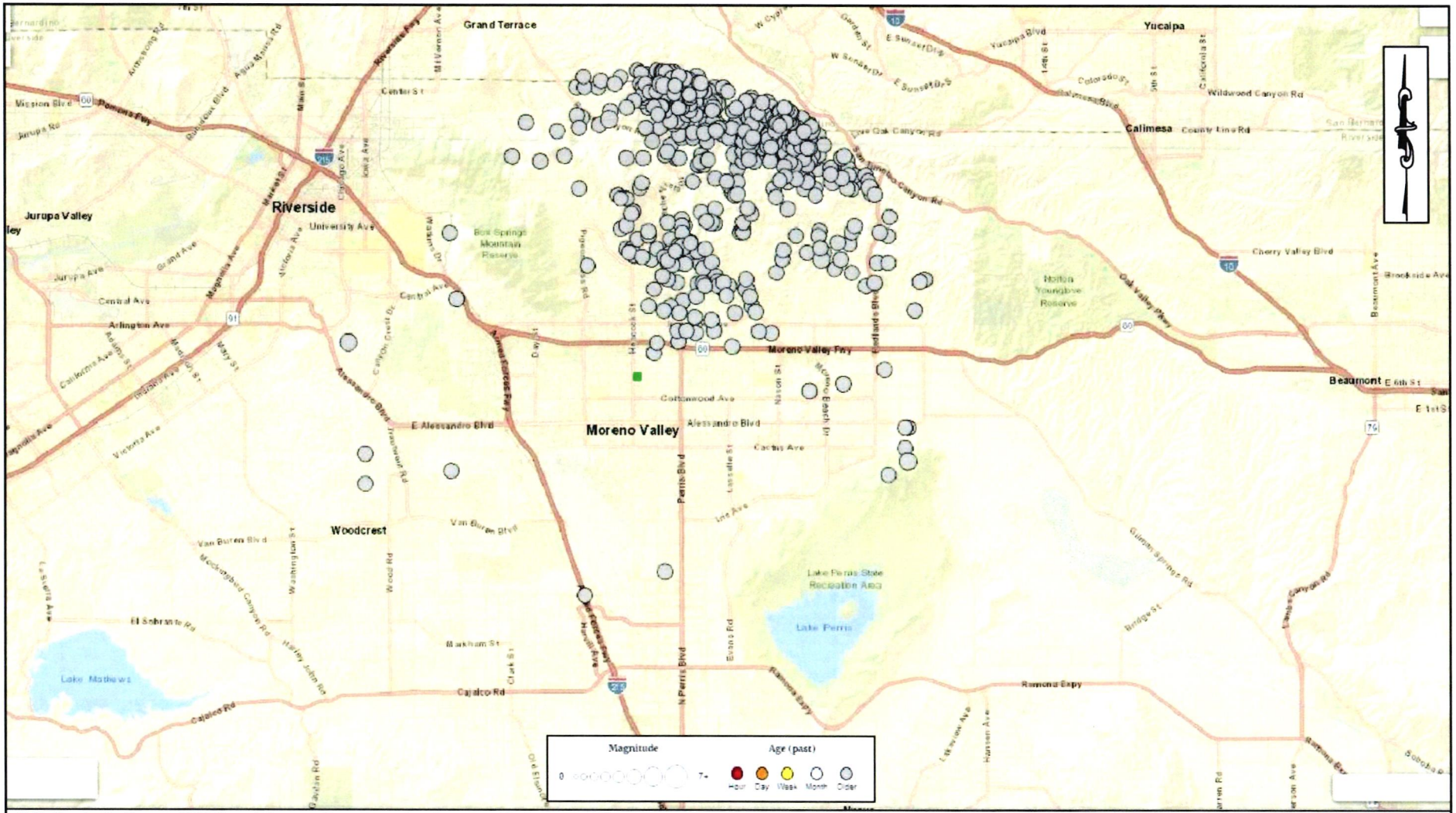
PROJECT:	APN: 481-270-058	**PROJECT NO:**	33736.1
CLIENT:	CASC ENGINEERING AND CONSULTING	**ENCLOSURE:**	A-3
LOR Geotechnical Group, Inc.		**DATE:**	JUNE 2022
		SCALE:	1" ≈ 2,000'



U.S. Geologic Survey (2021) real-time earthquake epicenter map. Plotted are 535 epicenters of instrument-recorded events from 1932 to present (07/19/21) of local magnitude of M4.0 to M10.0 within a radius of ~62 miles (100 kilometers) of the site. Location accuracy varies. The site is indicated by the green square. The selected magnitude corresponds to a threshold intensity value where very light damage potential begins. These evens are also generally widely felt by persons. Red lines mark the surface traces of known Quaternary-age faults.

HISTORICAL SEISMICITY MAP - 100km Radius

PROJECT:	APN: 481-270-058	**PROJECT NO:**	33736.1
CLIENT:	CASC ENGINEERING AND CONSULTING	**ENCLOSURE:**	A-4
LOR Geotechnical Group, Inc.		**DATE:**	JUNE 2022
		SCALE:	1" ≈ 40km



U.S. Geologic Survey (2021) real-time earthquake epicenter map. Plotted are 486 epicenters of instrument-recorded events from 1978 to present (07/19/21) of local magnitude of M2.0 to M10.0 within a radius of ~6.3 miles (10 kilometers) of the site. Location accuracy varies. The site is indicated by the green square. The selected magnitude corresponds to a threshold intensity value where very light damage potential begins. These evens are also generally widely felt by persons. Red lines mark the surface traces of known Quaternary-age faults.

HISTORICAL SEISMICITY MAP - 10km Radius

PROJECT:	APN: 481-270-058	**PROJECT NO:**	33736.1
CLIENT:	CASC ENGINEERING AND CONSULTING	**ENCLOSURE:**	A-5
LOR Geotechnical Group, Inc.		**DATE:**	JUNE 2022
		SCALE:	1" ≈ 7km

APPENDIX B

Field Investigation Program and Boring Logs

APPENDIX B
FIELD INVESTIGATION

Subsurface Exploration

The site was investigated on July 15, 2021 and consisted of advancing 4 exploratory borings to depths between 26 feet and 31.5 feet below the existing ground surface. The approximate locations of the borings are shown on Enclosure A-2, within Appendix A.

The drilling exploration was conducted using a truck-mounted Mobile B-61 drill rig equipped with 8-inch diameter hollow stem augers. The soils were continuously logged by our geologist who inspected the site, created detailed logs of the borings, obtained undisturbed, as well as disturbed, soil samples for evaluation and testing, and classified the soils by visual examination in accordance with the Unified Soil Classification System.

Relatively undisturbed samples of the subsoils were obtained at a maximum interval of 5 feet. The samples were recovered by using a California split barrel sampler of 2.50 inch inside diameter and 3.25 inch outside diameter from the ground surface to the total depth explored. The samplers were driven by a 140 pound automatic trip hammer dropped from a height of 30 inches. The number of hammer blows required to drive the sampler into the ground the final 12 inches were recorded and further converted to an equivalent SPT N-value. Factors such as efficiency of the automatic trip hammer used during this investigation (80%), borehole diameter (8"), and rod length at the test depth were considered for further computing of equivalent SPT N-values corrected for field procedures (N60) which are included in the boring logs, Enclosures B-1 through B-4.

The undisturbed soil samples were retained in brass sample rings of 2.42 inches in diameter and 1.00 inch in height, and placed in sealed containers. Disturbed soil samples were obtained at selected levels within the borings and placed in sealed containers for transport to the laboratory.

All samples obtained were taken to our geotechnical laboratory for storage and testing. Detailed logs of the borings are presented on the enclosed Boring Logs, Enclosures B-1 through B-4. A Boring Log Legend and Soil Classification Chart are presented on Enclosures B-I and B-ii, respectively.

CONSISTENCY OF SOIL

SANDS

SPT BLOWS	CONSISTENCY
0-4	Very Loose
4-10	Loose
10-30	Medium Dense
30-50	Dense
Over 50	Very Dense

COHESIVE SOILS

SPT BLOWS	CONSISTENCY
0-2	Very Soft
2-4	Soft
4-8	Medium
8-15	Stiff
15-30	Very Stiff
30-60	Hard
Over 60	Very Hard

SAMPLE KEY

Symbol	Description
	INDICATES CALIFORNIA SPLIT SPOON SOIL SAMPLE
	INDICATES BULK SAMPLE
	INDICATES SAND CONE OR NUCLEAR DENSITY TEST
	INDICATES STANDARD PENETRATION TEST (SPT) SOIL SAMPLE

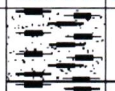
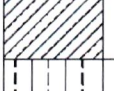
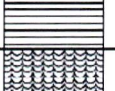
TYPES OF LABORATORY TESTS

1	Atterberg Limits
2	Consolidation
3	Direct Shear (undisturbed or remolded)
4	Expansion Index
5	Hydrometer
6	Organic Content
7	Proctor (4", 6", or Cal216)
8	R-value
9	Sand Equivalent
10	Sieve Analysis
11	Soluble Sulfate Content
12	Swell
13	Wash 200 Sieve

BORING LOG LEGEND

PROJECT:	Proposed Residential Development, Moreno Valley, California	**PROJECT NO.:**	33736.1
CLIENT:	CASC Engineering and Consulting	**ENCLOSURE:**	B-i
LOR GEOTECHNICAL GROUP, INC.		**DATE:**	June 2022

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE)	GRAVEL AND GRAVELLY SOILS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE)	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS (MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE)	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN 50% OF MATERIAL IS SMALLER THAN NO.200 SIEVE SIZE)	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

PARTICLE SIZE LIMITS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE	
12"	3"	3/4"	No . 4	No. 10	No. 40	200	

(U.S. STANDARD SIEVE SIZE)

SOIL CLASSIFICATION CHART

PROJECT:	Proposed Residential Development, Moreno Valley, California	**PROJECT NO.:**	33736.1
CLIENT:	CASC Engineering and Consulting	**ENCLOSURE:**	B-ii
LOR GEOTECHNICAL GROUP, INC.		**DATE:**	June 2022

LOG OF BORING B-1

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	11	3, 7, 10, 11	8.9		112.7			SM	@ 0 feet, FILL: SILTY SAND, fine to coarse grained, dry, loose (tilled), includes minor concrete+trash debris. @ 1 foot, OLDER ALLUVIUM: SILTY SAND, approximately 10% coarse grained sand, 20% medium grained sand, 35% fine grained sand, and 35% silty fines, brown, damp to moist, loose to medium dense.
5	18		5.2		120.2				@ 6± feet, sandier, increase in density, coarser grained.
	28		5.3		116.3				
10	34		2.3		109.1				@ 10 feet, approximately 20% coarse grained sand, 40% medium grained sand, 25% fine grained sand, and 15% silty fines, dense.
15	62		9.9		122.6				@ 15 feet, much finer grained, approximately 5% coarse grained sand, 15% medium grained sand, 40% fine grained sand, and 40% silty fines, red-brown.
20	93		7.6		126.4				@ 20 feet, slightly sandier, cemented, brown.
25	68		6.9		122.7				@ 25 feet, siltier, moist, red-brown.
30									END OF BORING @ 26.5' Fill to 1±' No groundwater No bedrock

PROJECT:	Proposed Residential Development	PROJECT NUMBER:	33736.1
CLIENT:	CASC Engineering & Consulting	ELEVATION:	--
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	July 15, 2021
		EQUIPMENT:	Mobile B-61
		HOLE DIA.: 8"	ENCLOSURE: B-1

LOG OF BORING B-2

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
			TEST DATA						
0								SM	@ 0 feet, FILL: SILTY SAND, fine to coarse grained, dry, brown, loose (tilled).
	58	4, 9, 11	8.4		108.3			ML	@ 1± foot, OLDER ALLUVIUM: SANDY SILT, approximately 5% medium grained sand, 40% fine grained sand, and 55% silty fines, red-brown, damp, hard.
5	63		8.3		111.6			SM	@ 5 feet, SILTY SAND, approximately 10% medium grained sand, 50% fine grained sand, and 40% silty fines, brown to red-brown, damp, dense.
10	42		7.4		117.7				@ 10 feet, slightly sandier, includes minor medium to coarse grained sand.
15	57		5.6		124.8				@ 15 feet, darker red-brown, dense to very dense.
20	48		5.5		118.8				@ 20 feet, finer grained, dense.
25	91		5.5		125.2				@ 25 feet, abundant medium grained sand locally, very dense, slow drilling.
30	96		7.9		126.4				@ 30 feet, moderately cemented, very dense.
35									END OF BORING @ 31.5' due to practical refusal Fill to 1±' No groundwater No bedrock

PROJECT:	Proposed Residential Development	PROJECT NUMBER:	33736.1
CLIENT:	CASC Engineering & Consulting	ELEVATION:	--
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	July 15, 2021
		EQUIPMENT:	Mobile B-61
		HOLE DIA.: 8"	ENCLOSURE: B-2

LOG OF BORING B-3

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	31		6.4		123.4			SM	@ 0 feet, FILL: SILTY SAND, fine to coarse grained, dry, brown, loose (tilled). @ 1± feet, OLDER ALLUVIUM: SILTY SAND, approximately 5% coarse grained sand, 20% medium grained sand, 40% fine grained sand, and 35% silty fines, red-brown, damp, dense. @ 4± feet, becomes yellow-brown and finer grained, very dense.
5	40 for 6"		8.5						@ 5 feet, sample disturbed.
10	70 for 11"		5.1		110.7				@ 10 feet, slightly sandier.
15	84		8.0		123.0				@ 15 feet, moderately cemented, trace of calcium carbonate (as stringers).
20	93		5.8		123.7				@ 20 feet, yellow-brown, very dense (slow drilling).
25	94 for 11"		6.5		125.8				@ 25 feet, very dense, mostly fine to medium silty sand.
30									END OF BORING @ 26' due to practical refusal Fill to 1±' No groundwater No bedrock

PROJECT:	Proposed Residential Development	PROJECT NUMBER:	33736.1
CLIENT:	CASC Engineering & Consulting	ELEVATION:	--
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	July 15, 2021
		EQUIPMENT:	Mobile B-61
		HOLE DIA.: 8"	ENCLOSURE: B-3

LOG OF BORING B-4

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0								SM	@ 0 feet, FILL: SILTY SAND, fine to coarse grained, brown, dry, loose (tilled).
	31	3, 7, 8 9, 10, 11	6.0		112.8			ML	@ 1± feet, OLDER ALLUVIUM: SANDY SILT, approximately 5% coarse grained sand, 20% medium grained sand, 20% fine grained sand, and 55% silty fines, red-brown, damp, medium dense to dense (stiff to hard).
5	52		4.0		121.7				
10	15		1.4		106.1			SW	@ 10± feet, WELL GRADED SAND, approximately 20% coarse grained sand, 40% medium grained sand, 35% fine grained sand, and 5% silty fines, brown, dry, medium dense.
								SM	@ 12.5± feet, SILTY SAND, approximately 5% coarse grained sand, 20% medium grained sand, 35% fine grained sand, and 40% silty fines.
15	74 for 11"		11.9		116.6				
20	91		7.7		126.1				@ 20 feet, very dense, slow drilling.
25	91		11.0		125.6				@ 25 feet, includes minor clay, very dense.
30									END OF BORING @ 26.5' due to practical refusal Fill to 1±' No grounwater No bedrock

PROJECT:	Proposed Residential Development	PROJECT NUMBER:	33736.1
CLIENT:	CASC Engineering & Consulting	ELEVATION:	--
		DATE DRILLED:	July 15, 2021
LOR GEOTECHNICAL GROUP INC.		EQUIPMENT:	Mobile B-61
		HOLE DIA.: 8"	ENCLOSURE: B-4

APPENDIX C

Laboratory Testing Program and Test Results

APPENDIX C
LABORATORY TESTING

General

Selected soil samples obtained from our borings were tested in our geotechnical laboratory to evaluate the physical properties of the soils affecting foundation design and construction procedures. The laboratory testing program performed in conjunction with our investigation included in-place moisture content and dry density, laboratory compaction characteristics, direct shear, expansion index, sieve analysis, sand equivalent, R-value, and soluble sulfate content. Descriptions of the laboratory tests are presented in the following paragraphs:

Moisture Density Tests

The moisture content and dry density information provides an indirect measure of soil consistency for each stratum, and can also provide a correlation between soils on this site. The dry unit weight and field moisture content were determined for selected undisturbed samples, in accordance with ASTM D 2922 and ASTM D 2216, respectively, and the results are shown on the Boring Logs, Enclosures B-1 through B-4 for convenient correlation with the soil profile.

Laboratory Compaction

Selected soil samples were tested in the laboratory to determine compaction characteristics using the ASTM D 1557 compaction test method. The results are presented in the following table:

LABORATORY COMPACTION				
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.C.S.)**	**Maximum Dry Density (pcf)**	**Optimum Moisture Content (percent)**
B-1	2-5	(SM) Silty Sand	130.5	7.0
B-4	1-4	(ML) Sandy Silt	132.0	8.0

Direct Shear Tests

Shear tests are performed with a direct shear machine in general accordance with ASTM D 3080 at a constant rate-of-strain (usually 0.04 inches/minute). The machine is designed to test a sample partially extruded from a sample ring in single shear. Samples are tested at varying normal loads in order to evaluate the shear strength parameters, angle of internal friction and cohesion. Samples are tested in a remolded condition (90 percent relative compaction per ASTM D 1557) and soaked, to represented the worse case conditions expected in the field.

The results of the shear tests are presented in the following table:

DIRECT SHEAR TESTS				
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.C.S.)**	**Angle of Internal Friction (degrees)**	**Apparent Cohesion (psf)**
B-1	2-5	(SM) Silty Sand	110	28
B-4	1-4	(ML) Sandy Silt	330	27

Expansion Index Tests

Remolded samples are tested to determine their expansion potential in accordance with the Expansion Index (EI) test. The test is performed in accordance with the Uniform Building Code Standard 18-2. The test results are presented in the following table:

EXPANSION INDEX TESTS				
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.C.S.)**	**Expansion Index (EI)**	**Expansion Potential**
B-2	1-4	(SM) Sandy Silt	24	Low
Expansion Index:	0-20 Very low	21-50 Low	51-90 Medium	91-130 High

Sieve Analysis

A quantitative determination of the grain size distribution was performed for selected samples in accordance with the ASTM D 422 laboratory test procedure. The determination is performed by passing the soil through a series of sieves, and recording the weights of retained particles on each screen. The results of the sieve analyses are presented graphically on Enclosure C-1.

Sand Equivalent

The sand equivalent of selected soils were evaluated using the California Sand Equivalent Test Method, Caltrans Number 217. The results of the sand equivalent tests are presented with the grain size distribution analyses on the following table and Enclosure C-1.

SAND EQUIVALENT			
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.C.S)**	**Sand Equivalent (SE)**
B-2	1-4	(ML) Sandy Silt	15

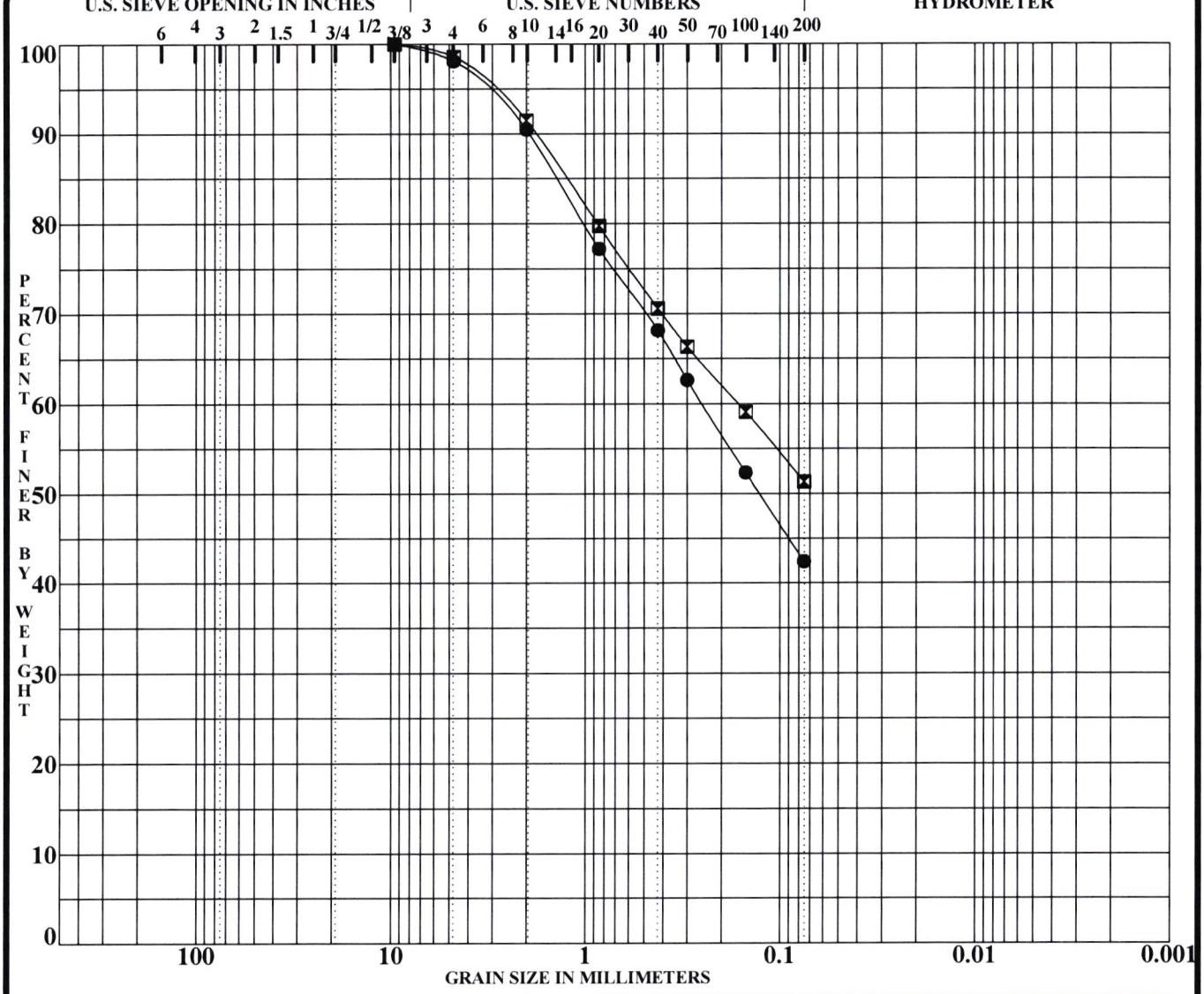
R-Value Test

Soil samples were obtained at probable pavement subgrade level and was tested to determine its R-value using the California R-Value Test Method, Caltrans Number 301.The results of the R-value test is presented on Enclosure C-1.

Soluble Sulfate Content Tests

The soluble sulfate content of selected subgrade soils was evaluated and the concentration of soluble sulfates in the soils was determined by measuring the optical density of a barium sulfate precipitate. The precipitate results from a reaction of barium chloride with water extractions from the soil samples. The measured optical density is correlated with readings on precipitates of known sulfate concentrations. The test results are presented on the following table:

SOLUBLE SULFATE CONTENT TESTS			
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.G.S.)**	**Sulfate Content (percent by weight)**
B-1	2-5	(SM) Silty Sand	<0.005
B-2	1-4	(ML) Sandy Silt	< 0.005
B-4	1-4	(ML) Sandy Silt	< 0.005



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Soil Classification	SE	RV	PL	PI	Cc	Cu
● B-1	@ 2-5 ft	(SM) Silty Sand	--	--				
⊠ B-4	@ 1-4 ft	(ML) Sandy Silt	13	12				

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1	@ 2-5 ft	9.50	0.25			1.9	55.7	42.4	
⊠ B-4	@ 1-4 ft	9.50	0.16			1.4	47.3	51.3	

PROJECT *Proposed Residential Development*

PROJECT NO. *33736.1*

DATE *8/3/21*

GRADATION CURVES

LOR Geotechnical Group, Inc.

Riverside, CA 92507

ENCLOSURE C-1

APPENDIX D

Seismic Design Spectra

Project: APN 481-270-058
Project Number: 33767.1
Client: CASC Engineering & Consulting
Site Lat/Long: 33.9324/-117.2417
Controlling Seismic Source: San Jacinto

REFERENCE	NOTATION	VALUE
Site Class	C, D, D default, or E	D measured
Site Class D - Table 11.4-1	F_a	1.0
Site Class D - 21.3(ii)	F_v	2.5
$0.2*(S_{D1}/S_{DS})$	T_0	0.132
S_{D1}/S_{DS}	T_S	0.662
Fundamental Period (12.8.2)	T	Period
Seismic Design Maps or Fig 22-14	T_L	8
Equation 11.4-4 - $2/3*S_{M1}$	S_{D1}	0.7253*
Equation 11.4-2 - F_V*S_1	S_{M1}	1.088*

REFERENCE	NOTATION	VALUE
Fv (Table 11.4-2)[Used for General Spectrum]	F_v	1.7
Design Maps	S_s	1.643
Design Maps	S_1	0.640
Equation 11.4-1 - F_A*S_S	S_{MS}	1.643*
Equation 11.4-3 - $2/3*S_{MS}$	S_{DS}	1.095*
Design Maps	PGA	0.696
Table 11.8-1	F_{PGA}	1.1
Equation 11.8-1 - $F_{PGA}*PGA$	PGA_M	0.766*
Section 21.5.3	80% of PGA_M	0.612
Design Maps	C_{RS}	0.921
Design Maps	C_{R1}	0.899

RISK COEFFICIENT

Cr - At Perods <=0.2, Cr=C_{RS}	C_{RS}	0.921
Cr - At Periods >=1.0, Cr=C_{R1}	C_{R1}	0.899

Cr - At Periods between 0.2 and 1.0 use trendline formula to complete

Period	Cr
0.200	0.921
0.300	0.918
0.400	0.916
0.500	0.913
0.600	0.910
0.680	0.908
1.000	0.899

* **Code based design value**. See accompanying data for Site Specific Design values.

Mapped values from https://seismicmaps.org/

PROBABILISTIC SPECTRA[1]
2% in 50 year Exceedence

Project No: 33767.1

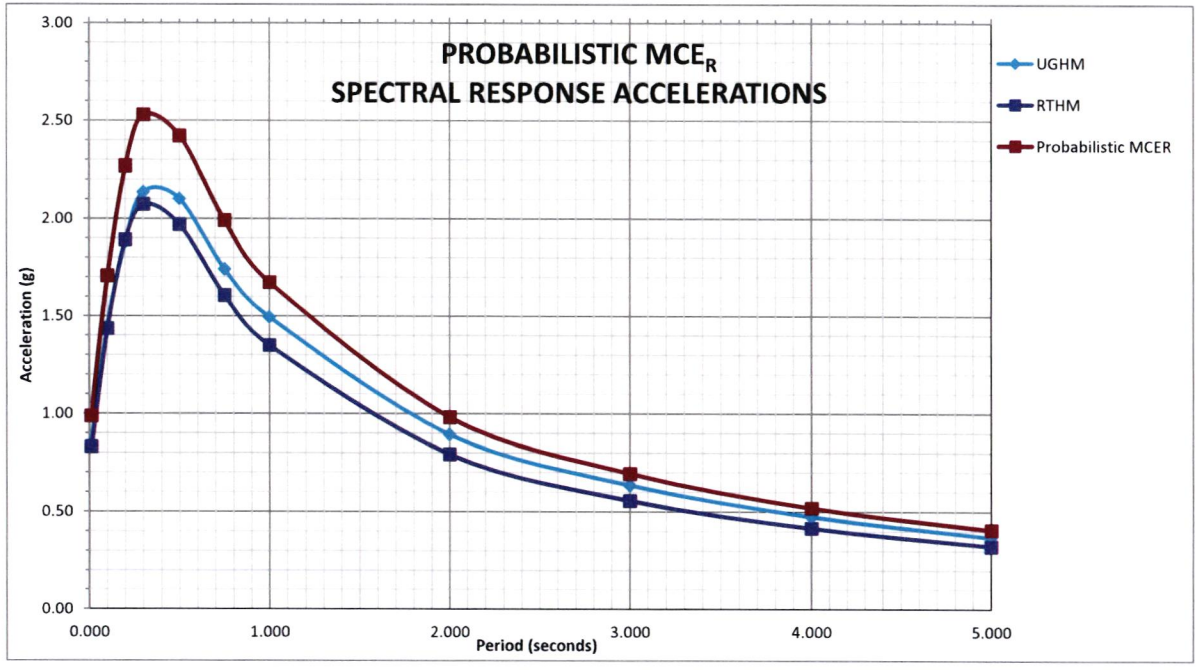
Period	UGHM	RTHM	Max Directional Scale Factor[2]	Probabilistic MCE
0.010	0.847	0.829	1.19	0.987
0.100	1.445	1.433	1.19	1.705
0.200	1.877	1.890	1.20	2.268
0.300	2.135	2.072	1.22	2.528
0.500	2.100	1.968	1.23	2.421
0.750	1.739	1.605	1.24	1.990
1.000	1.492	1.348	1.24	1.672
2.000	0.893	0.791	1.24	0.981
3.000	0.634	0.555	1.25	0.694
4.000	0.473	0.414	1.25	0.518
5.000	0.367	0.322	1.26	0.406

Probabilistic PGA: 0.847

Is Probabilistic $Sa_{(max)} < 1.2F_a$? NO

[1] Data Sources:
https://earthquake.usgs.gov/hazards/interactive/
https://earthquake.usgs.gov/designmaps/rtgm/

[2] Shahi-Baker RotD100/RotD50 Factors (2014)



DETERMINISTIC SPECTRUM

Largest Amplitudes of Ground Motions Considering All Sources Calculated using Weighted Mean of Attenuation Equations[1]

Controlling Source: San Jacinto

Is Probabilistic $Sa_{(max)}$<1.2Fa? **NO**

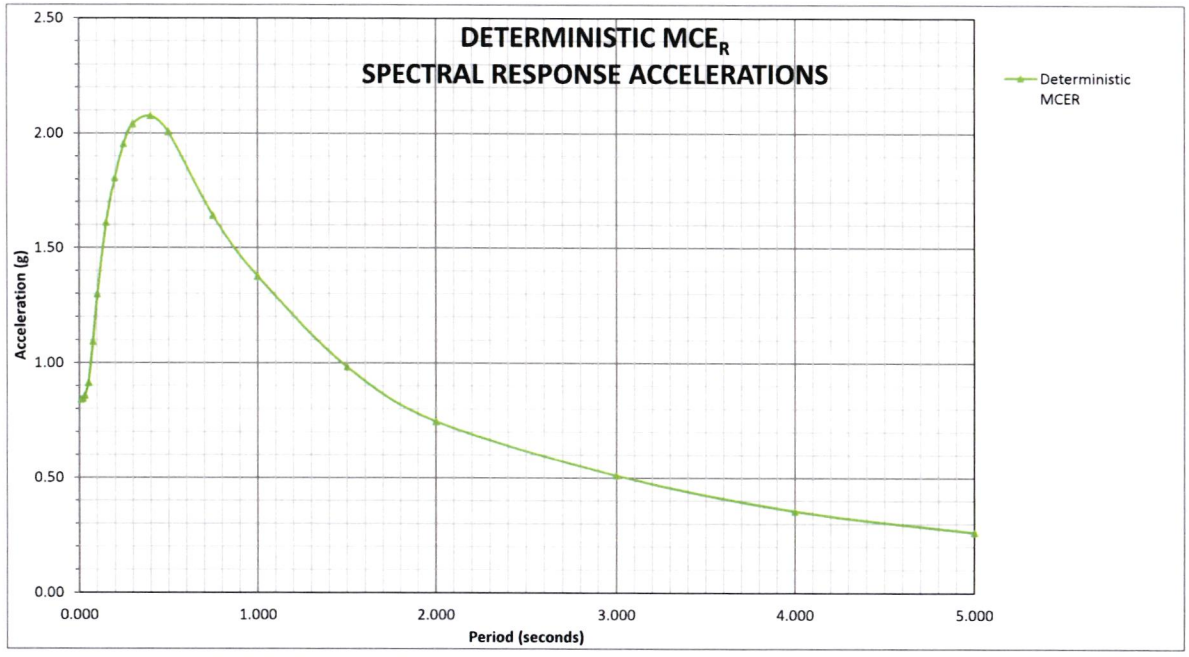
Period	Deterministic PSa Median + 1.σ for 5% Damping	Max Directional Scale Factor[2]	Deterministic MCE	Section 21.2.2 Scaling Factor Applied
0.010	0.705	1.19	0.840	0.840
0.020	0.709	1.19	0.843	0.843
0.030	0.720	1.19	0.857	0.857
0.050	0.767	1.19	0.912	0.912
0.075	0.918	1.19	1.092	1.092
0.100	1.090	1.19	1.297	1.297
0.150	1.341	1.20	1.609	1.609
0.200	1.503	1.20	1.803	1.803
0.250	1.614	1.21	1.952	1.952
0.300	1.671	1.22	2.038	2.038
0.400	1.686	1.23	2.074	2.074
0.500	1.630	1.23	2.005	2.005
0.750	1.322	1.24	1.639	1.639
1.000	1.109	1.24	1.375	1.375
1.500	0.792	1.24	0.982	0.982
2.000	0.601	1.24	0.745	0.745
3.000	0.407	1.25	0.509	0.509
4.000	0.283	1.25	0.354	0.354
5.000	0.208	1.26	0.263	0.263

Project No: 33767.1

Is Determinstic $Sa_{(max)}$<1.5*Fa?	NO
Section 21.2.2 Scaling Factor:	N/A
Deterministic PGA:	0.705
Is Deterministic PGA >=F_{PGA}*0.5?	YES

[1] NGAWest 2 GMPE worksheet and Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3) - Time Dependent Model

[2] Shahi-Baker RotD100/RotD50 Factors (2014)



SITE SPECIFIC SPECTRA

Period	Probabilistic MCE	Deterministic MCE	Site-Specific MCE	Design Response Spectrum (Sa)
0.010	0.987	0.840	0.840	0.560
0.100	1.705	1.297	1.297	0.865
0.200	2.268	1.803	1.803	1.202
0.300	2.528	2.038	2.038	1.359
0.500	2.421	2.005	2.005	1.337
0.750	1.990	1.639	1.639	1.093
1.000	1.672	1.375	1.375	0.917
2.000	0.981	0.745	0.745	0.497
3.000	0.694	0.509	0.509	0.339
4.000	0.518	0.354	0.354	0.236
5.000	0.406	0.263	0.263	0.175

ASCE 7-16: Section 21.4

	Site Specific Calculated Value	Design Value
SDS:	1.223	1.223
SD1:	1.018	1.018
SMS:	1.835	1.835
SM1:	1.527	1.527
Site Specific PGAm:	0.705	0.705
Site Class:	D measured	

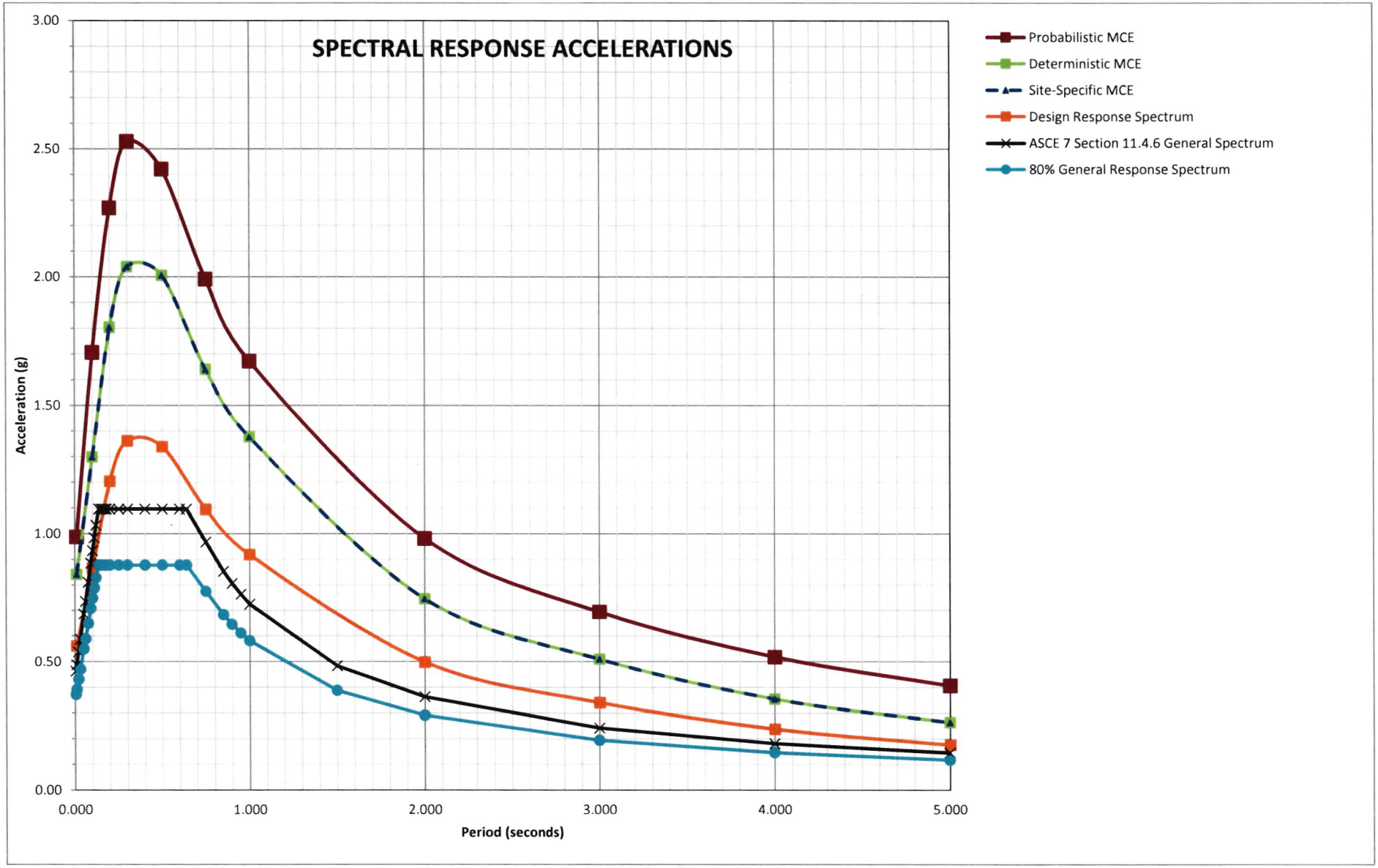
Seismic Design Category - Short* D

Seismic Design Category - 1s* D

* Risk Categories I, II, or III

Period	ASCE 7 SECTION 11.4.6 General Spectrum	80% General Response Spectrum
0.005	0.463	0.370
0.010	0.488	0.390
0.020	0.537	0.430
0.030	0.587	0.470
0.050	0.686	0.549
0.060	0.736	0.589
0.075	0.810	0.648
0.090	0.885	0.708
0.100	0.934	0.747
0.110	0.984	0.787
0.120	1.034	0.827
0.136	1.095	0.876
0.150	1.095	0.876
0.160	1.095	0.876
0.170	1.095	0.876
0.180	1.095	0.876
0.200	1.095	0.876
0.250	1.095	0.876
0.300	1.095	0.876
0.400	1.095	0.876
0.500	1.095	0.876
0.600	1.095	0.876
0.640	1.095	0.876
0.750	0.967	0.774
0.850	0.853	0.683
0.900	0.806	0.645
0.950	0.764	0.611
1.000	0.725	0.580
1.500	0.484	0.387
2.000	0.363	0.290
3.000	0.242	0.193
4.000	0.181	0.145
5.000	0.145	0.116

Project No: 33767.1



Project No: 33767.1

PUBLIC NOTICE

August 9, 2023

Riverside County, Housing and Workforce Solutions
3403 Tenth Street, Suite 300
Riverside, California 92501
(951) 955-0856 Diana Acosta

TO ALL INTERESTED AGENCIES, GROUPS, AND PERSONS:

These notices shall satisfy two separate but related procedural requirements for activities to be undertaken by the County of Riverside. Any individual, group or agency submitting comments should specify in their comments which "notice" their comments address.

REQUEST FOR RELEASE OF FUNDS

On or about August 29, 2023, the County of Riverside will submit a request to the U.S. Department of Housing and Urban Development (HUD) Los Angeles Field Office for the release of HOME Investment Partnerships Act (HOME) funds under Title II of the Cranston-Gonzalez National Affordable Housing Act of 1990, to undertake the following project:

PROJECT NAME: Eucalyptus Avenue Family Housing Project

PURPOSE: The project activity includes the use of up to $464,716 in HOME Investment Partnership Act (HOME) funds by Mary Erickson Community Housing, a nonprofit public benefit corporation and an affordable housing developer and certified Community Housing Development Organization (CHDO), for the new construction of seven (7) unit affordable housing project consisting of four (4) three-bedroom, two-bath units and three (3) four-bedroom, two bath units, ranging in size from 1,290 sq. ft. to 1,700 sq. ft. plus attached two car garage, and included front and backyards for sale to qualified low- to moderate-income households earning at or below 80% of the area median income, first time home buyers, with a preference for U.S. Veterans in the City of Moreno Valley.

FORM APPROVED COUNTY COUNSEL
BY: PAULA S. SALCIDO DATE 8/7/2023

LOCATION: The project site is roughly 1.40-acres in size. Eucalyptus Avenue Family Housing Project is located on the North side of Eucalyptus Avenue between Heacock Street and Indian Street, census tract 425.15, in the City of Moreno Valley of Riverside County, State of California and can also be identified as Assessor Parcel Number 481-270-058.

This activity may be undertaken over multiple years.

FINDING OF NO SIGNIFICANT IMPACT

The County of Riverside has determined that the project will have no significant impact on the human environment. Therefore, an Environmental Impact Statement under the National Environmental Policy Act of 1969 (NEPA) is not required. Additional project information is

contained in the Environmental Assessment (EA) on file at the Housing Authority of the County of Riverside at 5555 Arlington Ave, Riverside, CA 92504. The EA may be examined or copied between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, except in the event of a holiday. The EA may also be downloaded at the following website address https://www.harivco.org/.

PUBLIC COMMENTS

Any individual, group, or agency may submit written comments on the EA and the Request for Release of Funds to the Department of Housing, and Workforce Solutions, Attention: Diana Acosta at 3403 Tenth Street, Suite 300, Riverside, CA 92501 or email comments to diacosta@rivco.org. All comments received at the address specified above **on or before August 29, 2023** will be considered by the County of Riverside prior to submission of a request for release of funds. Comments should specify which Notice they are addressing.

RELEASE OF FUNDS

The County of Riverside certifies to the HUD Los Angeles Field Office that Kevin Jeffries in his capacity as the Chairman of the Board of Supervisors consents to accept the jurisdiction of the Federal courts if an action is brought to enforce responsibilities in relation to the environmental review process and that these responsibilities have been satisfied. HUD's approval of the certification satisfies its responsibilities under NEPA and related laws and authorities and allows the County of Riverside Housing and Workforce Solutions Department to allocate HOME Investment Partnerships Act funds on behalf of the County of Riverside.

OBJECTIONS TO RELEASE OF FUNDS

HUD will accept objections to its release of funds and the County of Riverside's certification for a period of fifteen days following the anticipated submission date or its actual receipt of the request (whichever is later) only if they are on one of the following bases:

a. the certification was not executed by the Certifying Officer of the County of Riverside;
b. the County of Riverside has omitted a step or failed to make a decision or finding required by HUD regulations at 24 CFR part 58;
c. the grant recipient has committed funds or incurred costs not authorized by 24 CFR Part 58 before approval of a release of funds by HUD; or
d. another Federal agency acting pursuant to 40 CFR Part 1504 has submitted a written finding that the project is unsatisfactory from the standpoint of environmental quality.

Objections must be prepared and submitted via email in accordance with the required procedures (24 CFR Part 58, Sec. 58.76) and shall be addressed to the following HUD Los Angeles Field Offices: (1) Office of Public Housing at HUDLOSANGELESOPH@hud.gov, and (2) Community Planning and Development at CPDLA@hud.gov. Potential objectors should contact HUD Los Angeles Field Offices via email to verify the actual last day of the objection period.

NOTICIA PUBLICA

9 de agosto de 2023

Condado de Riverside, Vivienda y Soluciones para la Fuerza Laboral
3403 Tenth Street, Suite 300
Riverside, California 92501
(951) 955-0856 Diana Acosta

A TODAS LAS AGENCIAS, GRUPOS Y PERSONAS INTERESADAS:

Estos avisos deberán satisfacer dos requisitos de procedimiento separados pero relacionados para las actividades que llevará a cabo el Condado de Riverside. Cualquier individuo, grupo o agencia que presente comentarios debe especificar en sus comentarios qué "aviso" de su dirección de comentarios.

SOLICITUD DE LIBERACIÓN DE FONDOS

En o alrededor del 29 de agosto de 2023, el Condado de Riverside presentará una solicitud a la Oficina Local de Los Ángeles del Departamento de Vivienda y Desarrollo Urbano de los Estados Unidos (HUD) para la liberación de fondos de la Ley de Asociaciones de Inversión HOME (HOME) bajo el Título II de la Ley Nacional de Vivienda Asequible Cranston-González de 1990, para emprender el siguiente proyecto:

NOMBRE DEL PROYECTO: Proyecto de vivienda familiar Eucalyptus Avenue

PROPÓSITO: La actividad del proyecto incluye el uso de hasta $464,716 en fondos de la Ley de Asociación de Inversión HOME (HOME) por Mary Erickson Community Housing, una corporación de beneficio público sin fines de lucro y un desarrollador de viviendas asequibles y Organización de Desarrollo de Vivienda Comunitaria certificada (CHDO), para la nueva construcción de un proyecto de vivienda asequible de siete (7) unidades que consta de cuatro (4) tres dormitorios, unidades de dos baños y tres (3) unidades de cuatro dormitorios y dos baños, que varían en tamaño desde 1,290 pies cuadrados hasta 1,700 pies cuadrados, más garaje adjunto para dos autos, e incluyeron patios delanteros y traseros para la venta a hogares calificados de ingresos bajos a moderados que ganan en o menos del 80% del ingreso medio del área, compradores de vivienda por primera vez, con preferencia por los veteranos estadounidenses en la ciudad de Moreno Valley.

UBICACIÓN: El sitio del proyecto tiene aproximadamente 1.40 acres de tamaño. Eucalyptus Avenue Family Housing Project está ubicado en el lado norte de Eucalyptus Avenue entre Heacock Street e Indian Street, sección censal 425.15, en la ciudad de Moreno Valley del condado de Riverside, estado de California y también se puede identificar como Assessor Parcel Number 481-270-058.

Esta actividad puede llevarse a cabo durante varios años.

NO HAY IMPACTO SIGNICATIVO

El Condado de Riverside ha determinado que el proyecto no tendrá un impacto significativo en el medio ambiente humano. Por lo tanto, no se requiere una Declaración de Impacto Ambiental bajo la Ley de Política Ambiental Nacional de 1969 (NEPA). La información adicional del proyecto está contenida en la Evaluación Ambiental (EA) archivada en la Autoridad de Vivienda del Condado de Riverside en 5555 Arlington Ave, Riverside, CA 92504. El EA puede ser examinado o copiado entre las 8:00 a.m. y las 5:00 p.m., de lunes a viernes, excepto en caso de día festivo. El EA también se puede descargar en la siguiente dirección del sitio web https://www.harivco.org/.

COMENTARIOS PÚBLICOS

Cualquier individuo, grupo o agencia puede enviar comentarios por escrito sobre el EA y la Solicitud de liberación de fondos al Departamento de Vivienda y Workforce Solutions, Atención: Diana Acosta en 3403 Tenth Street, Suite 300, Riverside, CA 92501 o enviar comentarios por correo electrónico a diacosta@rivco.org. Todos los comentarios recibidos en la dirección especificada anteriormente **en o antes del 29 de agosto de 2023** serán considerados por el Condado de Riverside antes de presentar una solicitud de liberación de fondos. Los comentarios deben especificar a qué Aviso se dirigen.

LIBERACIÓN DE FONDOS

El Condado de Riverside certifica a la Oficina Local de HUD en Los Ángeles que Kevin Jeffries en su calidad de Presidente de la Junta de Supervisores acepta la jurisdicción de los tribunales federales si se presenta una acción para hacer cumplir las responsabilidades en relación con el proceso de revisión ambiental y que estas responsabilidades han sido satisfechas. La aprobación de HUD de la certificación satisface sus responsabilidades bajo NEPA y las leyes y autoridades relacionadas y permite que el Departamento de Soluciones de Vivienda y Fuerza Laboral del Condado de Riverside asigne fondos de la Ley de Asociaciones de Inversión HOME en nombre del Condado de Riverside.

OBJECIONES A LA LIBERACIÓN DE FONDOS

HUD aceptará objeciones a su liberación de fondos y la certificación del Condado de Riverside por un período de quince días después de la fecha de presentación anticipada o su recepción real de la solicitud (lo que ocurra más tarde) solo si se encuentran en una de las siguientes bases:

a. la certificación no fue ejecutada por el Oficial Certificador del Condado de Riverside;
b. el Condado de Riverside ha omitido un paso o no ha tomado una decisión o hallazgo requerido por las regulaciones de HUD en 24 CFR parte 58;
c. el beneficiario de la subvención ha comprometido fondos o incurrido en costos no autorizados por 24 CFR Parte 58 antes de la aprobación de una liberación de fondos por parte de HUD; o
d. otra agencia federal que actúa de conformidad con 40 CFR Parte 1504 ha presentado una conclusión por escrito de que el proyecto no es satisfactorio desde el punto de vista de la calidad ambiental.

Las objeciones deben prepararse y enviarse por correo electrónico de acuerdo con los procedimientos requeridos (24 CFR Parte 58, Sec. 58.76) y deben dirigirse a las siguientes oficinas locales de HUD en Los Ángeles: (1) Oficina de Vivienda Pública en HUDLOSANGELESOPH@hud.gov, y (2) Planificación y Desarrollo Comunitario en CPDLA@hud.gov. Los posibles objetores deben comunicarse con las Oficinas Locales de HUD Los Ángeles por correo electrónico para verificar el último día real del período de objeción.

THE PRESS-ENTERPRISE

1825 Chicago Ave, Suite 100
Riverside, CA 92507
951-684-1200
951-368-9018 FAX

PROOF OF PUBLICATION
(2010, 2015.5 C.C.P)

Publication(s): The Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc.: /

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper in general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673, under date of August 25, 1995, Case Number 267864, and under date of September 16, 2013, Case Number RIC 1309013; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

08/09/2023

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Date: August 09, 2023
At: Riverside, California

Legal Advertising Representative, The Press-Enterprise

EDA-HOUSING AUTHORITY
5555 ARLINGTON AVE
RIVERSIDE, CA 92504

Ad Number: 0011617589-01

P.O. Number:

Ad Copy:

PUBLIC NOTICE

August 9, 2023

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3403 Tenth Street, Suite 300
Riverside, California 92501
(951) 955-0856 Diana Acosta

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LOCATION: The project site is roughly 1.40-acres in size. Eucalyptus Avenue Family Housing Project is located on the North side of Eucalyptus Avenue between Heacock Street and Indian Street, census tract 425.15, in the City of Moreno Valley of Riverside County, State of California and can also be identified as Assessor Parcel Number 481-270-058.

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Riverside, California 92501
(951) 955-0856 Diana Acosta

A TODAS LAS AGENCIAS, GRUPOS Y PERSONAS INTERESADAS:

Estos avisos deberán satisfacer dos requisitos de procedimiento separados pero relacionados para las actividades que llevará a cabo el Condado de Riverside. Cualquier individuo, grupo o agencia que presente comentarios debe especificar en sus comentarios qué "aviso" de su dirección de comentarios.

SOLICITUD DE LIBERACIÓN DE FONDOS

En o alrededor del 29 de agosto de 2023, el Condado de Riverside presentará una solicitud a la Oficina Local de Los Ángeles del Departamento de Vivienda y Desarrollo Urbano de los Estados Unidos (HUD) para la liberación de fondos de la Ley de Asociaciones de Inversión HOME (HOME) bajo el Título II de la Ley Nacional de Vivienda Asequible Cranston-González de 1990, para emprender el siguiente proyecto:

NOMBRE DEL PROYECTO: Proyecto de vivienda familiar Eucalyptus Avenue

PROPÓSITO: La actividad del proyecto incluye el uso de hasta $464,716 en fondos de la Ley de Asociación de Inversión HOME (HOME) por Mary Erickson Community Housing, una corporación de beneficio público sin fines de lucro y un desarrollador de viviendas asequibles y Organización de Desarrollo de Vivienda Comunitaria certificada (CHDO), para la nueva construcción de un proyecto de vivienda asequible de siete (7) unidades que consta de cuatro (4) tres dormitorios, unidades de dos baños y tres (3) unidades de cuatro dormitorios y dos baños, que varían en tamaño desde 1,290 pies cuadrados hasta 1,700 pies cuadrados, más garaje adjunto para dos autos, e incluyeron patios delanteros y traseros para la venta a hogares calificados de ingresos bajos a moderados que ganan en o menos del 80% del ingreso medio del área, compradores de vivienda por primera vez, con preferencia por los veteranos estadounidenses en la ciudad de Moreno Valley.

UBICACIÓN: El sitio del proyecto tiene aproximadamente 1.40 acres de tamaño. Eucalyptus Avenue Family Housing Project está ubicado en el lado norte de Eucalyptus Avenue entre Heacock Street e Indian Street, sección censal 425.15, en la ciudad de Moreno Valley del condado de Riverside, estado de California y también se puede identificar como Assessor Parcel Number 481-270-058.

Esta actividad puede llevarse a cabo durante varios años.

NO HAY IMPACTO SIGNICATIVO

El Condado de Riverside ha determinado que el proyecto no tendrá un impacto significativo en el medio ambiente humano. Por lo tanto, no se requiere una Declaración de Impacto Ambiental bajo la Ley de Política Ambiental Nacional de 1969 (NEPA). La información adicional del proyecto está contenida en la Evaluación Ambiental (EA) archivada en la Autoridad de Vivienda del Condado de Riverside en 5555 Arlington Ave, Riverside, CA 92504. El EA puede ser examinado o copiado entre las 8:00 a.m. y las 5:00 p.m., de lunes a viernes, excepto en caso de día festivo. El EA también se puede descargar en la siguiente dirección del sitio web https://www.harivco.org/.

COMENTARIOS PÚBLICOS

Cualquier individuo, grupo o agencia puede enviar comentarios por escrito sobre el EA y la Solicitud de liberación de fondos al Departamento de Vivienda y Workforce Solutions, Atención: Diana Acosta en 3403 Tenth Street, Suite 300, Riverside, CA 92501 o enviar comentarios por correo electrónico a diacosta@rivco.org. Todos los comentarios recibidos en la dirección especificada anteriormente **en o antes del 29 de agosto de 2023** serán considerados por el Condado de Riverside antes de presentar una solicitud de liberación de fondos. Los comentarios deben especificar a qué Aviso se dirigen.

LIBERACIÓN DE FONDOS

El Condado de Riverside certifica a la Oficina Local de HUD en Los Ángeles que Kevin Jeffries en su calidad de Presidente de la Junta de Supervisores acepta la jurisdicción de los tribunales federales si se presenta una acción para hacer cumplir las responsabilidades en relación con el proceso de revisión ambiental y que estas responsabilidades han sido satisfechas. La aprobación de HUD de la certificación satisface sus responsabilidades bajo NEPA y las leyes y autoridades relacionadas y permite que el Departamento de Soluciones de Vivienda y Fuerza Laboral del Condado de Riverside asigne fondos de la Ley de Asociaciones de Inversión HOME en nombre del Condado de Riverside.

OBJECIONES A LA LIBERACIÓN DE FONDOS

HUD aceptará objeciones a su liberación de fondos y la certificación del Condado de Riverside por un período de quince días después de la fecha de presentación anticipada o su recepción real de la solicitud (lo que ocurra más tarde) solo si se encuentran en una de las siguientes bases:

a. la certificación no fue ejecutada por el Oficial Certificador del Condado de Riverside;
b. el Condado de Riverside ha omitido un paso o no ha tomado una decisión o hallazgo requerido por las regulaciones de HUD en 24 CFR parte 58;
c. el beneficiario de la subvención ha comprometido fondos o incurrido en costos no autorizados por 24 CFR Parte 58 antes de la aprobación de una liberación de fondos por parte de HUD; o
d. otra agencia federal que actúa de conformidad con 40 CFR Parte 1504 ha presentado una conclusión por escrito de que el proyecto no es satisfactorio desde el punto de vista de la calidad ambiental.

Las objeciones deben prepararse y enviarse por correo electrónico de acuerdo con los procedimientos requeridos (24 CFR Parte 58, Sec. 58.76) y deben dirigirse a las siguientes oficinas locales de HUD en Los Ángeles: (1) Oficina de Vivienda Pública en HUDLOSANGELESOPH@hud.gov, y (2) Planificación y Desarrollo Comunitario en CPDLA@hud.gov. Los posibles objetores deben comunicarse con las Oficinas Locales de HUD Los Ángeles por correo electrónico para verificar el último día real del período de objeción.

Press-Enterprise
Published: 8/6/23

Riverside County Board of Supervisors
Request to Speak

Submit request to Clerk of Board (right of podium), Speakers are entitled to three (3) minutes, subject to Board Rules listed on the reverse side of this form.

SPEAKER'S NAME: Roy Bucklet

Address: _____

City: _____ **Zip:** _____

Phone #: _____

Date: _____ **Agenda #** 3.34

PLEASE STATE YOUR POSITION BELOW:

Position on "Regular" (non-appealed) Agenda Item:

_____**Support** _____**Oppose** _____**Neutral**

Note: If you are here for an agenda item that is filed for "Appeal", please state separately your position on the appeal below:

_____**Support** _____**Oppose** _____**Neutral**

I give my 3 minutes to: _____

BOARD RULES

Requests to Address Board on "Agenda" Items:
You may request to be heard on a published agenda item. Requests to be heard must be submitted to the Clerk of the Board before the scheduled meeting time.

Requests to Address Board on items that are " NOT" on the Agenda/Public Comment:
Notwithstanding any other provisions of these rules, a member of the public shall have the right to address the Board during the mid-morning "Oral Communications" segment of the published agenda. Said purpose for address must pertain to issues which are under the direct jurisdiction of the Board of Supervisors. YOUR TIME WILL BE LIMITED TO THREE (3) MINUTES. Donated time is not permitted during Public Comment.

Power Point Presentations/Printed Material:
Speakers who intend to conduct a formalized Power Point presentation or provide printed material must notify the Clerk of the Board's Office by 12 noon on the Monday preceding the Tuesday Board meeting, insuring that the Clerk's Office has sufficient copies of all printed materials and at least one (1) copy of the Power Point CD. Copies of printed material given to the Clerk (by Monday noon deadline) will be provided to each Supervisor. If you have the need to use the overhead "Elmo" projector at the Board meeting, please ensure your material is clear and with proper contrast, notifying the Clerk well ahead of the meeting, of your intent to use the Elmo.

Individual Speaker Limits:
Individual speakers are limited to a maximum of three (3) minutes. Please step up to the podium when the Chairman calls your name and begin speaking immediately. Pull the microphone to your mouth so that the Board, audience, and audio recording system hear you clearly. Once you start speaking, the "green" podium light will light. The "yellow" light will come on when you have one (1) minute remaining. When you have 30 seconds remaining, the "yellow" light will begin to flash, indicating you must quickly wrap up your comments. Your time is up when the "red" light flashes. The Chairman adheres to a strict three (3) minutes per speaker. ***Note: If you intend to give your time to a "Group/Organized Presentation", please state so clearly at the very bottom of the reverse side of this form.***

Group/Organized Presentations:
Group/organized presentations with more than one (1) speaker will be limited to nine (9) minutes at the Chairman's discretion. The organizer of the presentation will automatically receive the first three (3) minutes, with the remaining six (6) minutes relinquished by other speakers, as requested by them on a completed "Request to Speak" form, and clearly indicated at the bottom of the form.

Addressing the Board & Acknowledgement by Chairman:
The Chairman will determine what order the speakers will address the Board, and will call on all speakers in pairs. The first speaker should immediately step to the podium and begin addressing the Board. The second speaker should take up a position in one of the chamber aisles in order to quickly step up to the podium after the preceding speaker. This is to afford an efficient and timely Board meeting, giving all attendees the opportunity to make their case. Speakers are prohibited from making personal attacks, and/or using coarse, crude, profane or vulgar language while speaking to the Board members, staff, the general public and/or meeting participants. Such behavior, at the discretion of the Board Chairman, may result in removal from the Board Chambers by Sheriff Deputies.

Thank you for submitting your request to speak. The Clerk of the Board office has received your request and will be prepared to allow you to speak when your item is called. To attend the meeting, please call (669) 900-6833 and use **Meeting ID # 864 4411 6015 . Password is 20230829.** You will be muted until your item is pulled and your name is called. Please dial in at 9:00 am with the phone number you provided in the form so you can be identified during the meeting.

Submitted on August 28, 2023

First Name
Ayako

Last Name
Utsumi

Address (Street, City and Zip)
400 S. Ramona Ave #200

Phone
2133003076

Email
autsumi@valonconsulting.com

Agenda Date
08/29/2023

Agenda Item # or Public Comment
34 -- 22425 : HOUSING & WORKFORCE SOLUTIONS (HWS) NEPA review

State your position below
Support

Comments
Mary Erickson Community Housing supports item #34 and is available for any questions if necessary.

3.34