

HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT

QUAIL RUN APARTMENT PROJECT

**City of Riverside
Riverside County, California**

For Submittal to:

Planning Division
Community Development Department
City of Riverside
3900 Main Street
Riverside, CA 92522

Prepared for:

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February 5, 2015
CRM TECH Contract No. 2877

Title: Historical/Archaeological Resources Survey Report: Quail Run Apartment Project, City of Riverside, Riverside County, California

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USGS Quadrangle: Riverside East, Calif., 7.5’ quadrangle (Section 32, T2S R4W, San Bernardino Baseline and Meridian)

Project Size: Approximately 30 acres

Keywords: Sycamore Canyon area, Riverside; Phase I historical/archaeological resources survey; Assessor’s Parcel Nos. 253-240-020 and -028; no “historical resources” under CEQA

MANAGEMENT SUMMARY

Between December 2014 and February 2015, at the request of Albert A. Webb Associates, CRM TECH performed a cultural resources study on approximately 30 acres of vacant land in the southeast portion of the City of Riverside, Riverside County, California. The subject property of the study consists of Assessor's Parcel Nos. 253-240-020 and -028, located on the northwest corner of Central Avenue and Quail Run Road, in the northwest quarter of Section 32, T2S R4W, San Bernardino Baseline and Meridian.

The study is part of the environmental review process for the proposed construction of an apartment complex on the property. The City of Riverside, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA) and the City's Cultural Resources Ordinance. The purpose of the study is to provide the City with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify and evaluate such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, contacted Native American representatives, and carried out an intensive-level field survey. Through the various avenues of research, this study did not encounter any "historical resources" within or adjacent to the project area.

Based on these findings, CRM TECH recommends to the City of Riverside a determination of *No Impact* regarding cultural resources. No further cultural resources investigation is mandated by CEQA for the project unless development plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are discovered during earth-moving operations associated with the project, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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INTRODUCTION

Between December 2014 and February 2015, at the request of Albert A. Webb Associates, CRM TECH performed a cultural resources study on approximately 30 acres of vacant land in the southeast portion of the City of Riverside, Riverside County, California (Fig. 1). The subject property of the study consists of Assessor's Parcel Nos. 253-240-020 and -028, located on the northwest corner of Central Avenue and Quail Run Road, in the northwest quarter of Section 32, T2S R4W, San Bernardino Baseline and Meridian (Fig. 2).

The study is part of the environmental review process for the proposed construction of an apartment complex on the property. The City of Riverside, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.) and the City's Cultural Resources Ordinance (Title 20, Riverside Municipal Code). The purpose of the study is to provide the City with the necessary information and analysis to determine whether the proposed project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

In order to identify and evaluate such resources, CRM TECH conducted a historical/archaeological resources records search, pursued historical background research, contacted Native American representatives, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and final conclusion of the study.

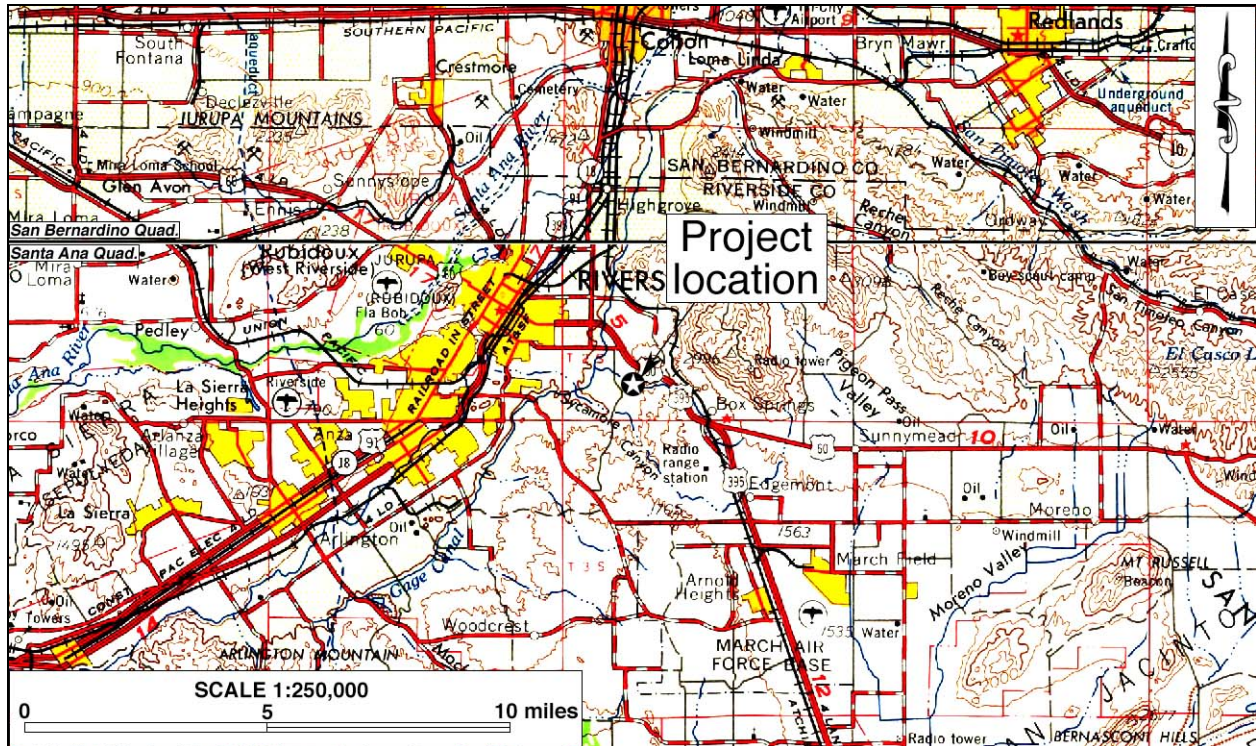
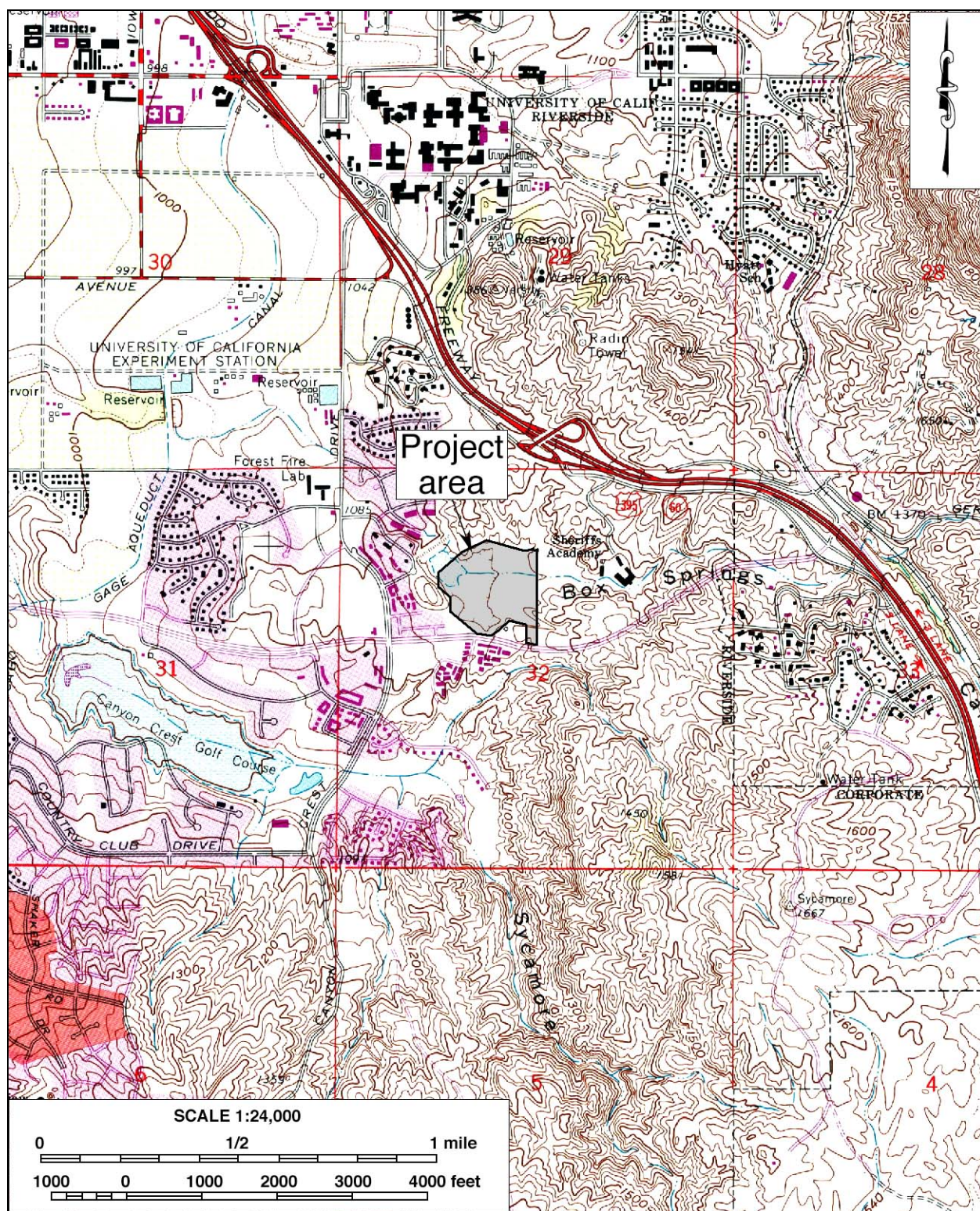


Figure 1. Project vicinity. (Based on USGS San Bernardino and Santa Ana, Calif., 1:250,000 quadrangles [USGS 1969; 1979])



SETTING

CURRENT NATURAL SETTING

The project area is situated at the western foothills of the Box Springs Mountains, on the southeastern outskirts of the City of Riverside. The natural environment of the region is dictated by the prevailing Mediterranean climate, featuring hot, dry summers and mild, wet winters. Typical temperature in July reaches above 100°F, and in the winter months may dip to around 30°F. Annual rainfall is typically less than 20 inches.

The project area consists of undeveloped land that is bordered by Central Avenue on the south, existing apartment complexes on the east, a residential neighborhood on the north, and a retention basin on the west. The ground surface in the project area has been extensively disturbed by past earth-moving activities, especially along the western project boundary. Many of the granitic boulder outcrops have been impacted, and some have been dug out and moved. A drainage runs through the property in a generally east-west direction.

The terrain ranges from level to hilly, with elevations around 1,100-1,150 feet above mean sea level. Soils in the project area consist of fine- to coarse-grained sands mixed with boulders and decomposing granite. Vegetation on the property includes wild mustard, foxtail, buckwheat, Indian tobacco, sage, and other small grasses and shrubs, with particularly dense growth around the western end of the drainage, near the retention basin (Fig. 3).

CULTURAL SETTING

Prehistoric Context

It is widely acknowledged that human occupation in what is now the State of California began 8,000-12,000 years ago. In order to understand Native American cultures before European contact, archaeologists have devised chronological frameworks that endeavor to correlate the observable technological and cultural changes in the archaeological record to distinct periods. Unfortunately, none of these chronological frameworks has been widely accepted, and none has been developed specifically for the so-called Inland Empire region of southern California, the nearest ones being for



Figure 3. Overview of the current natural setting of the project area. *Left:* towards the east across the project area; *right:* near the western project boundary, view to the south. (Photos taken on December 24, 2014)

the Colorado Desert and Peninsular Ranges area (Warren 1984) and for the Mojave Desert (Warren and Crabtree 1986).

The development of an overall chronological framework for the region is hindered by the lack of distinct stratigraphic layers of cultural sequences that could be dated by absolute dating methods. Since results from archaeological investigations in this region have yet to be synthesized into an overall chronological framework, most archaeologists tend to follow a chronology adapted from a scheme developed by William J. Wallace in 1955 and modified by others (Wallace 1955; 1978; Warren 1968; Chartkoff and Chartkoff 1984; Moratto 1984). Although the beginning and ending dates of the different horizons or periods may vary, the general framework of prehistory in this region under this chronology consists of the following four periods:

- Early Hunting Stage (ca. 10000-6000 B.C.), which was characterized by human reliance on big game animals, as evidenced by large, archaic-style projectile points and the relative lack of plant-processing artifacts;
- Millingstone Horizon (ca. 6000 B.C.-1000 A.D.), when plant foods and small game animals came to the forefront of subsistence strategies, and from which a large number of millingstones, especially heavily used, deep-basin metates, were left;
- Late Prehistoric Period (ca. 1000-1500 A.D.), during which a more complex social organization, a more diversified subsistence base—as evidenced by smaller projectile points, expedient milling stones and, later, pottery—and regional cultures and tribal territories began to develop;
- Protohistoric Period (ca. 1500-1700s A.D.), which ushered in long-distance contact with Europeans and led to the historic period.

Ethnohistoric Context

According to current ethnohistorical scholarship, what is now the City of Riverside lies on the border between the traditional territories of three Native American groups: the Serrano of the San Bernardino Mountains, the Luiseño of the Perris-Elsinore region, and the Gabrielino of the San Gabriel Valley. Kroeber (1925:Plate 57) suggests that the Native Americans of the Riverside area were probably Luiseño, Reid (1968:8-9) states that they were Serrano, and Strong (1929:7-9, 275) claims that they were Gabrielino. In any case, there also occurred a late influx of Cahuilla during the 19th century (Bean 1978).

Whatever the linguistic affiliation, Native Americans along the Santa Ana River exhibited similar social organization and resource procurement strategies. Villages were based on clan or lineage groups. Their home/base sites are marked by midden deposits, often with bedrock mortar features. During their seasonal rounds to exploit plant resources, small groups often ranged some distances in search of specific plants and animals. Their gathering strategies often left behind signs of special use sites, usually grinding slicks on bedrock boulders, at the locations of the resources.

Historic Context

The present-day Riverside area received its first European visitors during the early and mid-1770s, shortly after the beginning of Spanish colonization of Alta California in 1769. After the

establishment of Mission San Gabriel in 1771, the area became one of the mission's principal *rancherías*, known at the time as Jurupa. But despite these early contacts, no Europeans are known to have settled in the area until after the creation of the Rancho Jurupa land grant in 1838, which encompassed what is now the northern portion of the City of Riverside. During the 1840s, a number of other ranchos were established in the vicinity. The project area, as well as the area around it, was not included in any of these land grants, and thus remained unclaimed when California became a part of the United States in 1846.

In 1870, the town of Riverside was founded in today's downtown area, followed in the next few years by two other colonies in the Arlington-La Sierra area. The three separate enterprises eventually merged in 1875, and the City of Riverside was incorporated in 1883. The project area, a part of Riverside's eastern "highlands," was not involved in any of these early colonies, and was not incorporated into the city at the time. Situated at higher elevations than the colonies' first irrigation canals, the upper plain was largely undeveloped until 1885-1886, when the completion of the Gage Canal greatly increased the acreage under cultivation in the Riverside area, marking the beginning of a new phase in the city's growth. For more than a half-century after that, however, the project area remained outside Riverside city boundaries, until the city began to expand during the post-WWII period.

In the 1870s and 1880s, amid a land boom that swept through southern California, the young community of Riverside grew rapidly. The most important boost to Riverside's early prosperity came with the introduction of the naval orange in the mid-1870s. Its instant success in Riverside led to the spread of citrus cultivation throughout southern California, and propelled Riverside to the forefront of the citrus industry. In 1893, after a bitter local political dispute, Riverside split itself from San Bernardino County, and became the county seat and the dominant urban center of the newly created Riverside County. Since the mid-20th century, with the increasing diversification of its economic livelihood, much of Riverside's once extensive citrus acreage has given way to urban expansion. Nevertheless, the "citrus culture" that developed from the city's orange-dominated past continues to be an integral part of the community identity to the present time¹.

RESEARCH METHODS

RECORDS SEARCH

On December 5, 2014, CRM TECH archaeologist Nina Gallardo (see App. 1 for qualifications) conducted the historical/archaeological resources records search at the Eastern Information Center (EIC), University of California, Riverside. During the records search, Gallardo examined maps and records on file at the EIC for previously identified cultural resources in or near the project area and existing cultural resources reports pertaining to the vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Riverside County Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

¹ For further discussion on the history of Riverside, see Patterson (1996).

NATIVE AMERICAN PARTICIPATION

On December 4, 2014, CRM TECH submitted a written request to the State of California's Native American Heritage Commission for a records search in the commission's sacred lands file. On December 17, following the commission's recommendations, CRM TECH further contacted a total of 17 tribal representatives in the region in writing to solicit local Native American input regarding any potential cultural resources concerns over the proposed project. The correspondences between CRM TECH and the Native American representatives are attached to this report in Appendix 2.

HISTORICAL RESEARCH

Historical background research for this study was conducted by CRM TECH historian Bai "Tom" Tang (see App. 1 for qualifications) on the basis of published literature in local and regional history, archival records of the U.S. Bureau of Land Management (BLM), and historic maps and aerial photographs of the Riverside area. Among maps consulted for this study were the U.S. General Land Office's (GLO) land survey plat maps dated 1855-1877 and the U.S. Geological Survey's (USGS) topographic maps dated 1901-1980. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the BLM, located in Moreno Valley.

FIELD SURVEY

On December 24, 2014, CRM TECH archaeologists Daniel Ballester and Nina Gallardo (see App. 1 for qualifications) carried out the intensive-level, on-foot field survey of the project area. Where the terrain and vegetation permitted, the survey was completed by walking a series of parallel east-west transects spaced 15 meters (approximately 50 feet) apart. In areas of dense vegetation growth, the survey team stayed as close to the transect system as possible and inspected the ground surface wherever it was exposed. All granite outcrops on the property were inspected for evidence of past human activities, such as grinding surfaces. In this way, the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years ago or older). Ground visibility ranged from poor (0%) in areas of dense vegetation to good (90%) on most of the property.

RESULTS AND FINDINGS

RECORDS SEARCH

According to EIC records, Assessor's Parcel No. 253-240-020, in the southeastern portion of the project area, was covered by a previous cultural resources survey in 2006 (Bholat and Chandler 2006), but the rest of the project area had not been surveyed prior to this study. The 2006 study also included a records search and an intensive-level field survey, and identified no cultural resources (*ibid.*:10-12). Outside the project area but within a one-mile radius, EIC records show at least 35 other previous cultural resources studies covering various tracts of land and linear features, including adjacent properties to the east and the west (Fig. 4).

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contained confidential information

As a result of these and other similar studies in the vicinity, 39 historical/archaeological sites and one isolate—i.e., a locality with fewer than three artifacts—were previously recorded within the scope of the records search. Twenty-seven of the sites were of prehistoric—i.e., Native American—origin, virtually all of them consisting of bedrock milling features, such as grinding slicks and mortars, the most common type of prehistoric cultural features in the Riverside area. These sites were mostly found among granitic boulder outcrops in the hills surrounding the project area. The isolate, also of prehistoric origin, was described as a mano fragment.

The other 12 sites date to the historic period, and most of them represented buildings dating to the 1910-1930 era. One of the historic-period sites represents the historic Gage Canal, built in 1886-1888, while two others consisted of refuse dumps from the 1880s-1920s. None of these 40 previously recorded cultural resources was located within or adjacent to the project area, and thus none of them requires further consideration during this study.

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the Native American Heritage Commission reported in a letter dated December 11, 2014, that the sacred lands record search identified no Native American cultural resources within the project area, but recommended that local Native American groups be consulted for further information. For that purpose, the commission provided a list of potential contacts in the region (see App. 2). Upon receiving the commission's response, on December 17 CRM TECH sent written requests for comments to all 18 individuals on the referral list and the organizations they represent (see App. 2). As referred by the appropriate tribal government, Rose Duro, Cultural Committee Chairman for the Rincon Band of Luiseño Indians, was also contacted.

As of this time, four of the tribal representatives have responded in writing (see App. 2). Among them, Rose Duro and Shasta Gaughen, Tribal Historic Preservation Officer for the Pala Band of Mission Indians, indicated that they would defer to other tribes located in closer proximity to the project area. Joseph Ontiveros, Director of Cultural Resources for the Soboba Band of Luiseño Indians, requested further consultation with the project proponent and the lead agency, along with Native American monitoring by a Soboba representative during ground-disturbing activities in the project area. Chris Devers, Cultural Clerk for the Pauma Band of Luiseño Indians, recommended both archaeological and Native American monitoring during the project, and requested tribal review of the completed CEQA document.

HISTORICAL RESEARCH

Historical sources consulted for this study suggest that the project area is relatively low in sensitivity for cultural resources from the historic period (Figs. 5-9). The earliest detailed mapping of the project vicinity, completed in the 1850s-1870s, showed a "Wood Road from Riverside to Sycamore Cañon" traversing across the southwestern edge of the project area (Fig. 5). In later maps, however, the road was shown to be running further to the southwest (Fig. 6). In 1888 and 1892, the project area became private property as parts of two land patents issued by the U.S. government, both of the resulting from cash purchases (BLM n.d.). Despite this, no man-made features were noted within or

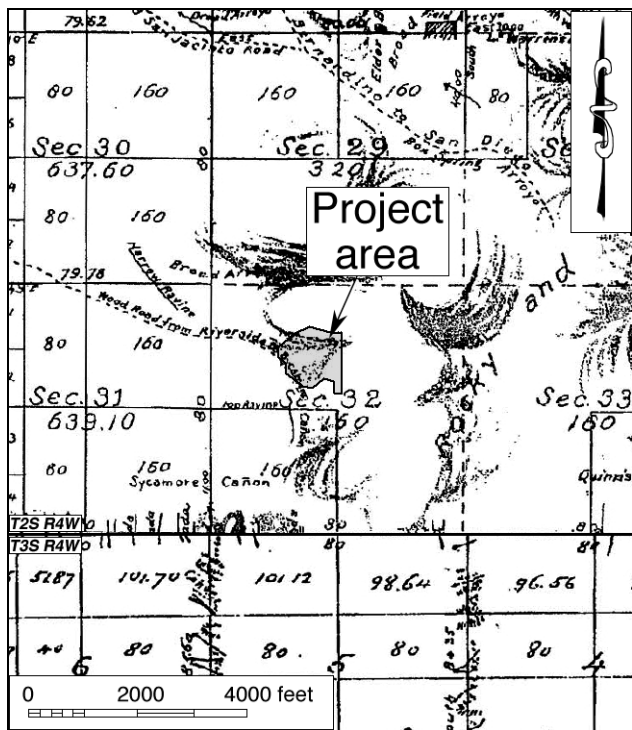


Figure 5. The project area and vicinity in 1853-1877.
(Source: GLO 1855; 1877)

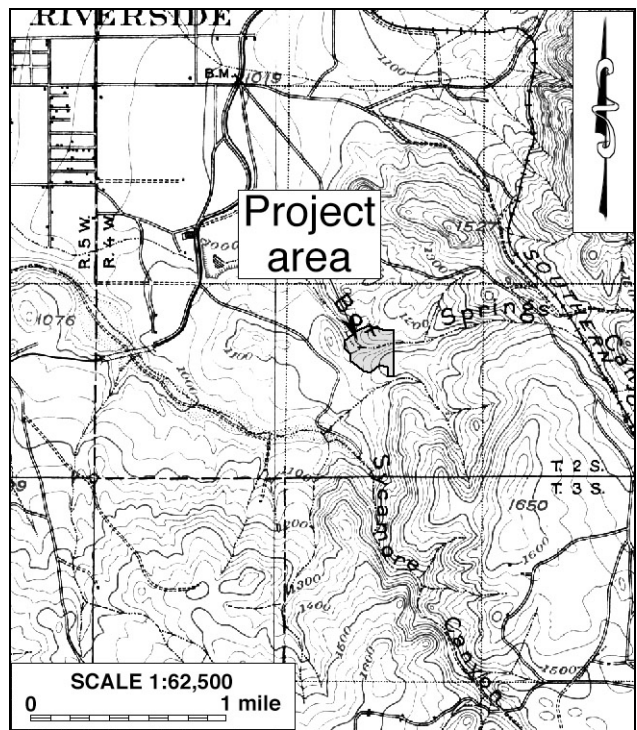


Figure 6. The project area and vicinity in 1897. (Source: USGS 1901)

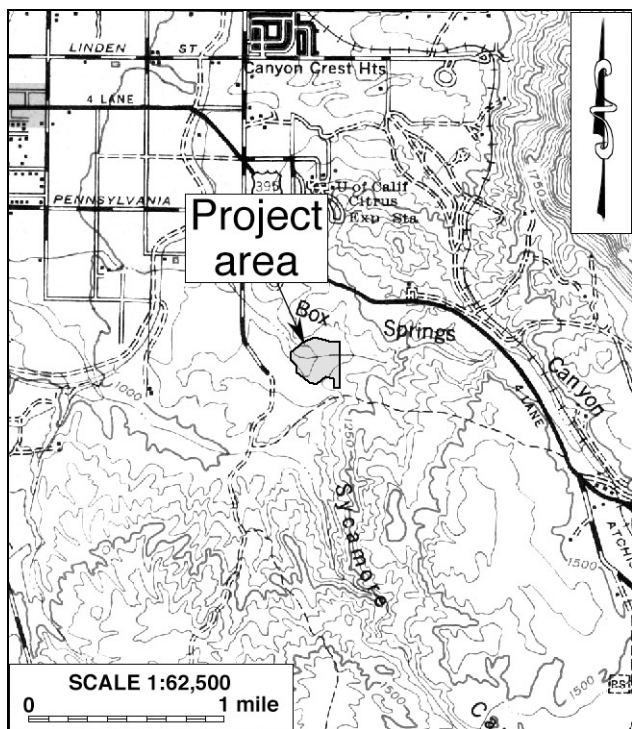


Figure 7. The project area and vicinity in 1939. (Source: USGS 1942)

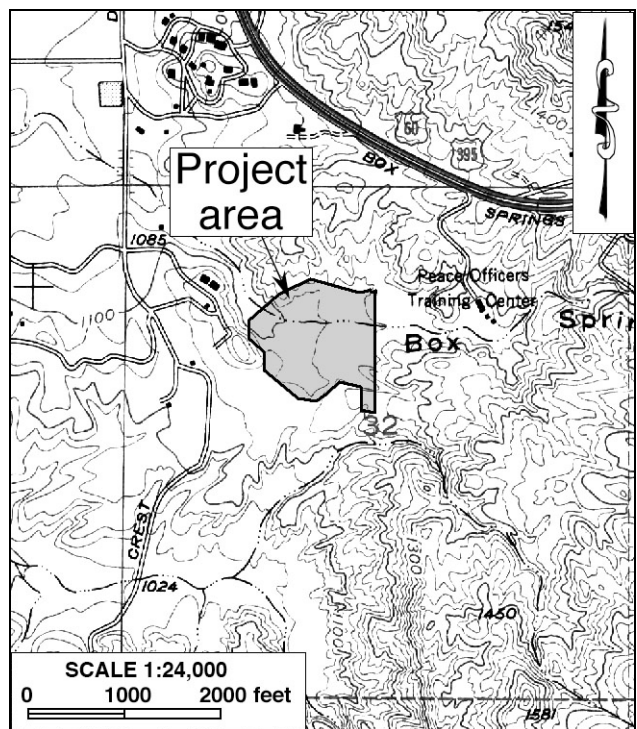


Figure 8. The project area and vicinity in 1951-1953.
(Source: USGS 1953)

adjacent to the project boundaries throughout the historic period (Figs. 6-9; NETR Online 1966), and the entire project area evidently remained unsettled and undeveloped to the present time (NETR Online 1967; 1978, 1994, 2002, 2005; USGS 1980).

FIELD SURVEY

The field survey produced negative results for any potential cultural resources, and no buildings, structures, objects, sites, features, or artifact deposits more than 50 years of age were encountered. As mentioned above, the granitic bedrock boulders in the project area were carefully inspected for the possible presence of Native American milling features, but none was found. Modern refuse was observed throughout the project area, but none of the items was of any historical or archaeological interest.

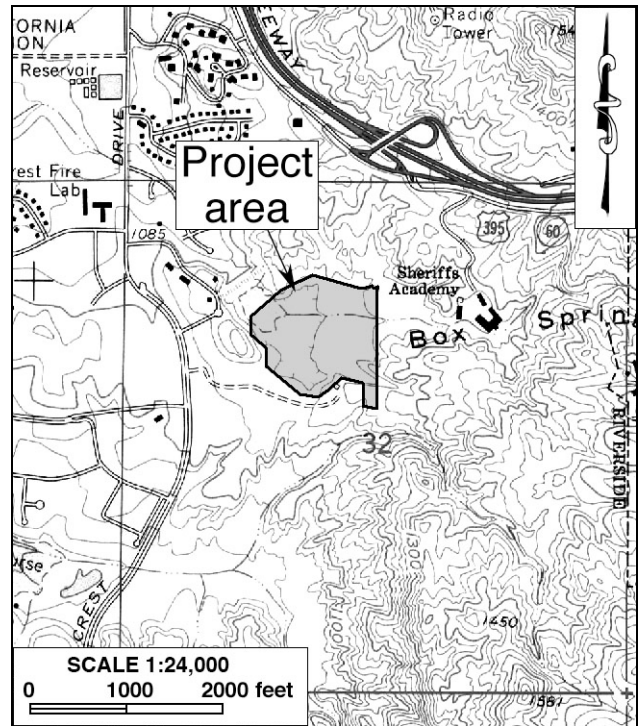


Figure 9. The project area and vicinity in 1966-1967.
(Source: USGS 1967)

DISCUSSION

The purpose of this study is to identify any cultural resources in the project area, and to assist the City of Riverside in determining whether such resources meet the definition of “historical resources,” as provided in the California Public Resources Code.

According to PRC §5020.1(j), “‘historical resource’ includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.” More specifically, CEQA guidelines state that the term “historical resources” applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR §15064.5(a)(1)-(3)).

Regarding the proper criteria of historical significance, CEQA guidelines mandate that “a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

- (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, or 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. (PRC §5024.1(c))

A local register of historical resources, as defined by PRC §5020.1(k), “means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.” For individual properties within the City of Riverside, the City’s Cultural Resources Ordinance provides two categories of historical significance designation, “Landmarks” and “Structures or Resources of Merit,” the criteria for which are outlined in Riverside Municipal Code §20.50.010(T) and §20.50.010(DD), respectively. A “Landmark,” according to the ordinance:

means any Improvement or Natural Feature that is an exceptional example of a historical, archaeological, cultural, architectural, community, aesthetic or artistic heritage of the City, retains a high degree of integrity, and:

1. Exemplifies or reflects special elements of the City’s cultural, social, economic, political, aesthetic, engineering, architectural, or natural history;
2. Is identified with persons or events significant in local, state or national history;
3. Embodies distinctive characteristics of a style, type, period or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship;
4. Represents the work of a notable builder, designer, or architect, or important creative individual;
5. Embodies elements that possess high artistic values or represents a significant structural or architectural achievement or innovation;
6. Reflects significant geographical patterns, including those associated with different eras of settlement and growth, particular transportation modes, or distinctive examples of park or community planning, or cultural landscape;
7. Is one of the last remaining examples in the City, region, State, or nation possessing distinguishing characteristics of an architectural or historical type or specimen; or
8. Has yielded or may be likely to yield, information important in history or prehistory. (RMC §20.50.010(T))

For the status of “Structure or Resource of Merit,” the ordinance set forth the definition and criteria as follows:

“Structure or Resource of Merit” means any Improvement or Natural Feature which contributes to the broader understanding of the historical, archaeological, cultural, architectural, community, aesthetic or artistic heritage of the City, retains sufficient integrity, and:

1. Has a unique location or singular physical characteristics or is a view or vista representing an established and familiar visual feature of a neighborhood community or of the City;
2. Is an example of a type of building which was once common but is now rare in its neighborhood, community or area;
3. Is connected with a business or use which was once common but is now rare;
4. A Cultural Resource that could be eligible under Landmark Criteria no longer exhibiting a high level of integrity, however, retaining sufficient integrity to convey significance under one or more of the Landmark Criteria;
5. Has yielded or may be likely to yield, information important in history or prehistory; or

6. An improvement or resource that no longer exhibits the high degree of integrity sufficient for Landmark designation, yet still retains sufficient integrity under one or more of the Landmark criteria to convey cultural resource significance as a Structure or Resource of Merit. (RMC §20.50.010(DD))

In addition, City of Riverside policies also require potential “historical resources” identified within the City’s jurisdiction to be evaluated for listing in the National Register of Historic Places. The eligibility for inclusion in the National Register is determined by applying the Secretary of the Interior’s criteria, developed by the National Park Service as per provision of the National Historic Preservation Act, which are essentially identical to the California Register criteria. Federal regulations provide the National Register criteria as follows:

- 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 a significant contribution to the broad patterns of our history; or
 - (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 discussed above, no potential “historical resources” were previously recorded within or adjacent to the project area, and none was encountered during this study. In addition, historical sources yielded no evidence of any settlement or land development endeavors in the project area during the historic period, and the Native American representatives identified no specific properties of traditional cultural value in the vicinity. Based on these findings, and in light of the criteria listed above, the present report concludes that *no historical resources exist within or adjacent to the project area.*

CONCLUSION AND RECOMMENDATIONS

CEQA establishes that “a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment” (PRC §21084.1). “Substantial adverse change,” according to PRC §5020.1(q), “means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired.”

In summary of the research results presented above, no “historical resources,” as defined by CEQA and associated regulations, were encountered throughout the course of this study. Therefore, CRM TECH presents the following recommendations to the City of Riverside:

- No “historical resources” exist within or adjacent to the project area, and thus the project as currently proposed will not cause a substantial adverse change to any known historical resources.

- No further cultural resources investigation is necessary for the proposed project unless development plans undergo such changes as to include areas not covered by this study.
- If buried cultural materials are discovered during earth-moving operations associated with the project, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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- 1901 Map: Riverside, Calif. (15', 1:62,500); surveyed in 1897.

- 1942 Map: Riverside, Calif. (15', 1:62,500); aerial photos taken in 1939.

- 1953 Map: Riverside East, Calif. (7.5', 1:24,000); aerial photos taken 1951, field checked in 1953.

- 1967 Map: Riverside East, Calif. (7.5', 1:24,000); aerial photographs taken 1966, field-checked in 1967.

- 1969 Map: San Bernardino, Calif. (1:250,000); 1958 edition revised.

- 1979 Map: Santa Ana, Calif. (1:250,000); 1959 edition revised.

- 1980 Map: Riverside East, Calif. (7.5', 1:24,000); 1967 edition photorevised in 1978.

Wallace, William J.

1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Archaeology* 11(3):214-230.

1978 Post-Pleistocene Archeology, 9,000 to 2,000 BC. In *Handbook of North American Indians*; Vol. 8, *California*, edited by Robert F. Heizer; pp. 25-36. Smithsonian Institution, Washington, D.C.

Warren, Claude N.

1968 Cultural Traditions and Ecological Adaptations on the Southern California Coast. In *Archaic Prehistory in Western United States*, edited by Cynthia Irwin-Williams; pp. 1-14.

Eastern New Mexico University Contributions in Anthropology 1(3). Portales, New Mexico.

1984 The Desert Region. In *California Archaeology*, edited by Michael J. Moratto, pp. 339-430. Academic Press, Orlando, Florida.

Warren, Claude N., and Robert H. Crabtree

1986 Prehistory of the Southwestern Area. In *Handbook of North American Indians*, Vol. 11: *Great Basin*, edited by Warren L. D'Azevedo; pp. 183-193. Smithsonian Institution, Washington, D.C.

APPENDIX 1: PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN Bai “Tom” Tang, M.A.

Education

- 1988-1993 Graduate Program in Public History/Historic Preservation, UC Riverside.
1987 M.A., American History, Yale University, New Haven, Connecticut.
1982 B.A., History, Northwestern University, Xi'an, China.
- 2000 “Introduction to Section 106 Review,” presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994 “Assessing the Significance of Historic Archaeological Sites,” presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

- 2002- Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002 Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997 Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993 Project Historian, Archaeological Research Unit, UC Riverside.
1990 Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992 Teaching Assistant, History of Modern World, UC Riverside.
1988-1993 Research Assistant, American Social History, UC Riverside.
1985-1988 Research Assistant, Modern Chinese History, Yale University.
1985-1986 Teaching Assistant, Modern Chinese History, Yale University.
1982-1985 Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

- 1988-1990 University of California Graduate Fellowship, UC Riverside.
1985-1987 Yale University Fellowship, Yale University Graduate School.
1980, 1981 President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (With Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST

Michael Hogan, Ph.D., RPA*

Education

- 1991 Ph.D., Anthropology, University of California, Riverside.
- 1981 B.S., Anthropology, University of California, Riverside; with honors.
- 1980-1981 Education Abroad Program, Lima, Peru.

- 2002 Section 106—National Historic Preservation Act: Federal Law at the Local Level.
 UCLA Extension Course #888.
- 2002 “Recognizing Historic Artifacts,” workshop presented by Richard Norwood,
 Historical Archaeologist.
- 2002 “Wending Your Way through the Regulatory Maze,” symposium presented by the
 Association of Environmental Professionals.
- 1992 “Southern California Ceramics Workshop,” presented by Jerry Schaefer.
- 1992 “Historic Artifact Workshop,” presented by Anne Duffield-Stoll.

Professional Experience

- 2002- Principal Investigator, CRM TECH, Riverside/Colton, California.
- 1999-2002 Project Archaeologist/Field Director, CRM TECH, Riverside.
- 1996-1998 Project Director and Ethnographer, Statistical Research, Inc., Redlands.
- 1992-1998 Assistant Research Anthropologist, University of California, Riverside
- 1992-1995 Project Director, Archaeological Research Unit, U. C. Riverside.
- 1993-1994 Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C.
 Riverside, Chapman University, and San Bernardino Valley College.
- 1991-1992 Crew Chief, Archaeological Research Unit, U. C. Riverside.
- 1984-1998 Archaeological Technician, Field Director, and Project Director for various southern
 California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

* Register of Professional Archaeologists; Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Deirdre Encarnación, M.A.

Education

- 2003 M.A., Anthropology, San Diego State University, California.
- 2000 B.A., Anthropology, minor in Biology, with honors; San Diego State University, California.
- 1993 A.A., Communications, Nassau Community College, Garden City, N.Y.

- 2001 Archaeological Field School, San Diego State University.
- 2000 Archaeological Field School, San Diego State University.

Professional Experience

- 2004- Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.
- 2001-2003 Part-time Lecturer, San Diego State University, California.
- 2001 Research Assistant for Dr. Lynn Gamble, San Diego State University.
- 2001 Archaeological Collection Catalog, SDSU Foundation.

PROJECT ARCHAEOLOGIST
Nina Gallardo, B.A.

Education

- 2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

- 2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.

Honors and Awards

- 2000-2002 Dean's Honors List, University of California, Riverside.

PROJECT ARCHAEOLOGIST/FIELD DIRECTOR
Daniel Ballester, M.S.

Education

- | | |
|------|--|
| 2013 | M.S., Geographic Information System (GIS), University of Redlands, California. |
| 1998 | B.A., Anthropology, California State University, San Bernardino. |
| 1997 | Archaeological Field School, University of Las Vegas and University of California, Riverside. |
| 1994 | University of Puerto Rico, Rio Piedras, Puerto Rico. |
| 2007 | Certificate in Geographic Information Systems (GIS), California State University, San Bernardino. |
| 2002 | “Historic Archaeology Workshop,” presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California. |

Professional Experience

- | | |
|-----------|--|
| 2002- | Field Director/GIS Specialist, CRM TECH, Riverside/Colton, California. |
| 1999-2002 | Project Archaeologist, CRM TECH, Riverside, California. |
| 1998-1999 | Field Crew, K.E.A. Environmental, San Diego, California. |
| 1998 | Field Crew, A.S.M. Affiliates, Encinitas, California. |
| 1998 | Field Crew, Archaeological Research Unit, University of California, Riverside. |

APPENDIX 2

**CORRESPONDENCE WITH
NATIVE AMERICAN REPRESENTATIVES***

* A total of 17 local Native American representatives were contacted; a sample letter is included in this report.

SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Project: Quail Run Apartment Project (CRM TECH Contract No. 2877)

County: Riverside

USGS Quadrangle Name: Riverside East, Calif.

Township 2 South **Range** 4 West **SB BM; Section(s)** 32

Company/Firm/Agency: CRM TECH

Contact Person: Nina Gallardo

Street Address: 1016 E. Cooley Drive, Suite A/B

City: Colton, CA **Zip:** 92324

Phone: (909) 824-6400 **Fax:** (909) 824-6405

Email: Ngallardo@crmtech.us

Project Description: The primary component of the project is to construct an apartment complex on 18 acres of land located on the northwest corner of Quail Run Road and Central Avenue in the City of Riverside, Riverside County, California.

December 4, 2014

STATE OF CALIFORNIAEdmund G. Brown, Jr., Governor**NATIVE AMERICAN HERITAGE COMMISSION**

1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471



December 11, 2014

Nina Gallardo
CRM Tech
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Sent by Fax: (909) 824-6405
Number of Pages: 4

Re: Quail Run Apartments Project (CRM TECH Contract No. 2877), Riverside County.

Dear Ms. Gallardo,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file 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.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. 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 or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

A handwritten signature in cursive script that reads "Katy Sanchez".

Katy Sanchez
Associate Government Program Analyst

**Native American Contacts
Riverside County
December 10, 2014**

Pala Band of Mission Indians
Historic Preservation Office/Shasta Gaughen
12196 Pala Mission Road Luiseno
Pala , CA 92059 Cupeno
sgaughen@palatribe.com
(760) 891-3515
(760) 742-3189 Fax

Soboba Band of Mission Indians
Rosemary Morillo, Chairperson; Attn: Carrie Garcia
P.O. Box 487 Luiseno
San Jacinto , CA 92581
carrieg@soboba-nsn.gov
(951) 654-2765
(951) 654-4198 Fax

Pauma & Yuima Reservation
Randall Majel, Chairperson
P.O. Box 369 Luiseno
Pauma Valley CA 92061
(760) 742-1289
(760) 742-3422 Fax

Pauma Valley Band of Luiseño Indians
Bennaec Calac
P.O. Box 369 Luiseno
Pauma Valley CA 92061
bennaecalac@aol.com
(760) 617-2872
(760) 742-3422 Fax

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477 Luiseno
Temecula , CA 92593
pmacarro@pechanga-nsn.gov
(951) 770-8100
(951) 506-9491 Fax

Pauma & Yuima
ATTN: EPA
P.O. Box 369 Luiseno
Pauma Valley CA 92061
kymberli_peters@yahoo.com
(760) 742-1289
(760) 742-3422 Fax

Rincon Band of Mission Indians
Vincent Whipple, Tribal Historic Pres. Officer
1 West Tribal Road Luiseno
Valley Center, CA 92082
vwhipple@rincontribe.org
(760) 297-2635
(760) 297-2639 Fax

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road Luiseno
Valley Center, CA 92082
bomazzetti@aol.com
(760) 749-1051
(760) 749-8901 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7060.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Quail Run Apartment Project (CRM TECH Contract No. 2877), Riverside County.

**Native American Contacts
Riverside County
December 10, 2014**

**San Luis Rey Band of Mission Indians
Tribal Council**

1889 Sunset Drive Luiseno
Vista , CA 92081

cjmojado@slrmissionindians.org

(760) 724-8505

(760) 724-2172 Fax

William J. Pink

48310 Pechanga Road Luiseno
Temecula , CA 92592

wjpink@hotmail.com

(909) 936-1216

Prefers e-mail contact

**San Luis Rey Band of Mission Indians
Cultural Department**

1889 Sunset Drive Luiseno
Vista , CA 92081 Cupeno

cjmojado@slrmissionindians.org

(760) 724-8505

(760) 724-2172 Fax

**La Jolla Band of Mission Indians
Lavonne Peck, Chairwoman**

22000 Highway 76 Luiseno
Pauma Valley CA 92061

rob.roy@lajolla-nsn.gov

(760) 742-3771

(760) 742-1704 Fax

**Kupa Cultural Center (Pala Band)
Shasta Gaughen, Assistant Director**

35008 Pala-Temecula Rd., PMB 50 Luiseno
Pala , CA 92059

cupa@palatribe.com

(760) 891-3590

(760) 742-4543 Fax

**Pauma & Yuima Reservation
Charles Devers, Cultural Committee**

P.O. Box 369 Luiseno
Pauma Valley CA 92061

(760) 742-1289

(760) 742-3422 Fax

**Pechanga Band of Mission Indians
Mark Macarro, Chairperson**

P.O. Box 1477 Luiseno
Temecula , CA 92593

mgoodhart@pechanga-nsn.

(951) 770-6100

(951) 695-1778 Fax

**Pechanga Cultural Resources Department
Anna Hoover, Cultural Analyst**

P.O. Box 2183 Luiseño
Temecula , CA 92593

ahoover@pechanga-nsn.gov

(951) 770-8104

(951) 694-0446 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Quail Run Apartment Project (CRM TECH Contract No. 2877), Riverside County.

**Native American Contacts
Riverside County
December 10, 2014**

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 Luiseno
San Jacinto , CA 92581
jontiveros@soboba-nsn.gov
(951) 663-5279
(951) 654-5544, ext 4137
(951) 654-4198 Fax

Pala Band of Mission Indians
Robert H. Smith, Chairperson
35008 Pala-Temecula Rd., PMB 50 Luiseno
Pala , CA 92059 Cupeno
(760) 891-3500
(760) 742-3189 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Quail Run Apartment Project (CRM TECH Contract No. 2877), Riverside County.

December 17, 2014

Chris Devers, Cultural Committee
Pauma and Yuima Reservation
P. O. Box 369
Pauma Valley, CA 92061

RE: Quail Run Apartment Project
30 acres in the City of Riverside
Riverside County, California
CRM TECH Contract #2877

Dear Mr. Devers:

Albert A. Webb Associates will be conducting environmental studies under CEQA for the Quail Run Apartment Project in the City of Riverside, Riverside County, California. The project area encompasses an approximately 30 acres of vacant land located on the northwest corner of Central Avenue and Quail Run Road, which will be developed into an apartment complex. The accompanying map, based on the USGS Riverside East, Calif., 7.5' quadrangle, depicts the location of the project area in Section 32, T2S R4W, SBBM. CRM TECH has been hired to conduct a cultural resource study, including the Native American scoping, for this project.

In a letter dated December 11, 2014, the Native American Heritage Commission reports that the sacred lands record search identified no Native American cultural resources within the project area, but recommends that local Native American groups be contacted for further information. Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the project area.

According to records on file at the Eastern Information Center, there are no known historical/archaeological sites within the boundaries of the project area. Outside the project area but within a one-mile radius, 39 historical/archaeological sites and one isolate—i.e., a locality with fewer than three artifacts—were reported to the EIC within the scope of the records search.

Twenty-seven of the sites and the isolate were prehistoric—i.e., Native American—in origin, the majority of them consisting of bedrock milling features, such as grinding slicks and mortars, the most common type of prehistoric cultural features in the Riverside area. These sites are concentrated among granitic boulder outcrops in the hills surrounding the project area. The isolate is described as a mano fragment. The other 12 sites date to the historic period and included buildings, the Gage Canal, and two refuse dumps from the 1880s-1920s. None of these previously recorded cultural resources was located in the immediate vicinity of the project area.

Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value within or near the project area that need to be taken into consideration as part of the cultural resources investigation. Any information or concerns may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail.

Requests for documentation or information we cannot provide will be forwarded to our client and/or the lead agency, which is the City of Riverside for CEQA-compliance purposes. We would also like to clarify that CRM TECH, as the cultural resources consultant for the project, is not the appropriate entity to initiate government-to-government consultations. Thank you for the time and effort in addressing this important matter.

Respectfully,

Nina Gallardo
CRM TECH
Email: ngallardo@crmtech.us

From: Cultural <Cultural@pauma-nsn.gov>
Sent: Thursday, December 18, 2014 8:00 AM
To: ngallardo@crmtech.us
Cc: Dixon, Patti; Jeremy Zagarella; bennaecalac@aol.com
Subject: Quail Run Apartment Project

Ms. Gallardo,

The Pauma Band of Luiseno Indians has received your December 17 letter on the Quail Run Apartment Project. We are unaware of any site specific sacred or religious sites within or near the project site. With 29 sites within a mile radius of the project, the potential of unearthing cultural resources increases.

Please provide us with a copy of the CEQA document to review when it's completed. We would urge the developer to have an archaeologist and Native monitor onsite for all ground disturbing activities.

If you have any questions, please contact us.

Chris Devers
Cultural Clerk
Pauma Band of Luiseno Indians

RINCON BAND OF LUISEÑO INDIANS

Culture Committee

1 W. Tribal Road · Valley Center, California 92082 ·
(760) 297-2621 or (760) 297-2622 & Fax: (760) 749-8901



December 22, 2014

Nina Gallardo
CRM Tech
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: Quail Run Apartment Project

Dear Ms. Gallardo:

Thank you for inviting us to submit comments on The Quail Run Apartment Project. This letter is written on behalf of the Rincon Band of Luiseño Indians. Rincon is submitting these comments concerning your projects potential impact on Luiseño cultural resources.

The Rincon Band has concerns for impacts to historic and cultural resources and the finding of items of significant cultural value that could be disturbed or destroyed and are considered culturally significant to the Luiseño people. This is to inform you, your identified location is within the Aboriginal Territory of the Luiseño people, but is not within Rincon's Historic boundaries. We defer you to the Pechanga Band of Luiseño Indians or Soboba Band of Luiseño Indians who are closer to your project area

Please contact the Native American Heritage Commission and they will assist with a referral to other tribes in the project area.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Rose Duro
Rincon Culture Committee Chairman

JAN 26 2015

BY:

Bo Mazzetti
Tribal Chairman

Stephanie Spencer
Vice Chairwoman

Steve Stallings
Council Member

Laurie E. Gonzalez
Council Member

Alfonso Kolb
Council Member

**PALA TRIBAL HISTORIC
PRESERVATION OFFICE**

PMB 50, 35008 Pala Temecula Road
Pala, CA 92059
760-891-3510 Office | 760-742-3189 Fax



December 31, 2014

Nina Gallardo
CRM Tech
2026 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: Quail Run Apartment Project; Contract #2877

Dear Mrs. Gallardo,

The Pala Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Robert Smith, Tribal Chairman.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized Pala Indian Reservation. The project is also beyond the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Therefore, we have no objection to the continuation of project activities as currently planned and we defer to the wishes of Tribes in closer proximity to the project area.

We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-891-3515 or by e-mail at sgaughen@palatribe.com.

Sincerely,



Shasta C. Gaughen, PhD
Tribal Historic Preservation Officer
Pala Band of Mission Indians

ATTENTION: THE PALA TRIBAL HISTORIC PRESERVATION OFFICE IS RESPONSIBLE FOR ALL REQUESTS FOR CONSULTATION. PLEASE ADDRESS CORRESPONDENCE TO SHASTA C. GAUGHEN AT THE ABOVE ADDRESS. IT IS NOT NECESSARY TO ALSO SEND NOTICES TO PALA TRIBAL CHAIRMAN ROBERT SMITH.

Janaury 20, 2015

Attn: Nina Gallardo
CRM TECH
1016 E. Cooley Drive, Ste. A/B
Colton, CA 92324



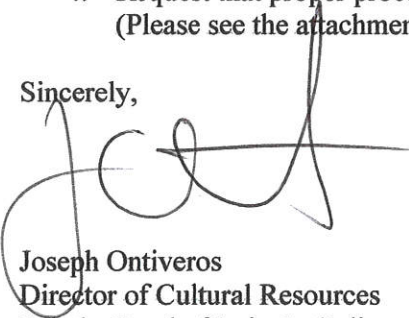
Re: CRM TECH # 2877
Quail Run Apartments Project
30 Acres located in the City of Riverside

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. The project location is in close proximity to known sites, and the tribe has concerns over inadvertent discoveries being unearthed during the ground-disturbing activities.

Soboba Band of Luiseño Indians is requesting the following:

1. To initiate a consultation with the Project Developer and Land owner.
2. Soboba Band of Luiseño Indians continues to act as a consulting tribal entity for this project. The transfer of information to the Soboba Band of Luiseño Indians regarding the progress of this project should be done as soon as new developments occur.
3. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that a Native American Monitor from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during any ground disturbing proceedings, including any archaeological testing that may be required.
4. Request that proper procedures be taken and requests of the tribe be honored (Please see the attachment)

Sincerely,


Joseph Ontiveros
Director of Cultural Resources
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

RECEIVED
JAN 24 2015

BY:

Cultural Items (Artifacts). Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer should agree to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. When appropriate and agreed upon in advance, the Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

The Developer should waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Developer should return said artifacts to the Soboba Band within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

Treatment and Disposition of Remains.

A. The Soboba Band shall be allowed, under California Public Resources Code § 5097.98 (a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

B. The Soboba Band, as MLD, shall complete its inspection within twenty-four (24) hours of receiving notification from either the Developer or the NAHC, as required by California Public Resources Code § 5097.98 (a). The Parties agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes.

C. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b). The Soboba Band, as the MLD in consultation with the Developer, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains.

D. All parties are aware that the Soboba Band may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near, the site of their discovery, in an area that shall not be subject to future subsurface disturbances. The Developer should accommodate on-site reburial in a location mutually agreed upon by the Parties.

E. The term "human remains" encompasses more than human bones because the Soboba Band's traditions periodically necessitated the ceremonial burning of human remains. Grave goods are those artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact.

Coordination with County Coroner's Office. The Lead Agencies and the Developer should immediately contact both the Coroner and the Soboba Band in the event that any human remains are discovered during implementation of the Project. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner shall ensure that notification is provided to the NAHC within twenty-four (24) hours of the determination, as required by California Health and Safety Code § 7050.5 (c).

Non-Disclosure of Location Reburials. It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r).

Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

Technical Memorandum

To: Brian Norton, City of Riverside

From: Eliza Laws, Senior Environmental Analyst

Date: March 24, 2015

Re: Air Quality/Greenhouse Gas Analysis for the Quail Run Apartments Project (Case No: P-14-0683, P4-0684, and P14-0685)

The following air quality assessment was prepared to evaluate whether the expected criteria air pollutant emissions generated as a result of construction and operation of the proposed Project would cause exceedances of the South Coast Air Quality Management District's (SCAQMD) thresholds for air quality in the Project area. The greenhouse gas (GHG) assessment was prepared to evaluate whether the expected criteria GHG emissions generated as a result of construction and operation of the proposed Project would exceed the SCAQMD draft screening significance thresholds. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000 *et seq.*). The methodology follows the *CEQA Air Quality Handbook* prepared by the SCAQMD for quantification of emissions and evaluation of potential impacts to air resources. As recommended by SCAQMD staff, the **California Emissions Estimator Model**® version 2013.2.2 (CalEEMod) was used to quantify Project-related emissions.

The Project consists of a 220 multi-family residential dwelling units located on approximately 16 acres of a 31 acre site on the northwesterly corner of Quail Run Road and Central Avenue in the City of Riverside, California. The proposed Project also includes approximately 10 acres of open space areas. The disturbance area is 18.53 acres, which includes the development footprint and the on-site borrow area.

▪ Regional Significance Thresholds

The thresholds contained in the *SCAQMD CEQA Air Quality Handbook*¹ (SCAQMD 1993) are considered regional thresholds and are shown in **Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds**, below. These regional thresholds were developed based on the SCAQMD's treatment of a major stationary source.

Table 1 – SCAQMD CEQA Daily Regional Significance Thresholds

Emission Threshold	Units	VOC	NO _x	CO	SO _x	PM-10	PM-2.5
Construction	lbs/day	75	100	550	150	150	55
Operation ¹	lbs/day	55	55	550	150	150	55

¹ South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993. (Available at SCAQMD.)

Air quality impacts can be described in a short- and long-term perspective. Short-term impacts occur during site grading and Project construction and consist of fugitive dust and other particulate matter, as well as exhaust emissions generated by construction-related vehicles. Long-term air quality impacts occur once the Project is in operation.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 or more acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of this Project's disturbance area (less than 30 acres), a Fugitive Dust Control Plan or a Large Operation Notification Form would not be required.

Short-Term Analysis

Short-term emissions from Project construction were evaluated using the CalEEMod version 2013.2.2 program. The estimated construction period for the proposed Project is approximately 10 months, beginning no sooner than January 2016. The default parameters within CalEEMod were used and these default values reflect a worst-case scenario, which means that Project emissions are expected to be equal to or less than the estimated emissions. In addition to the default values used, assumptions relevant to model inputs for short-term construction emission estimates used are:

- Construction is anticipated to begin in January 2016 with grading and end with architectural coatings (painting):

Construction Activity	Start Date	End Date	Total Working Days
Grading	January 1, 2016	March 30, 2016	64 days
Building Construction	April 1, 2016	November 1, 2016	153 days
Paving	April 1, 2016	May 1, 2016	21 days
Architectural Coatings	October 1, 2016	November 1, 2016	34 days

- The equipment to be used for each activity is shown below and represents program defaults. Each piece of equipment is assumed to operate 8 hours per day:

Construction Activity	Off-Road Equipment	Unit Amount
Grading	Excavators	2
	Graders	1
	Rubber Tired Dozers	1
	Scrapers	2
	Tractors/Loaders/Backhoes	2
Building Construction	Cranes	1
	Forklifts	3
	Generator Sets	1
	Tractors/Loaders/Backhoes	3
	Welders	1
Paving	Pavers	2
	Paving Equipment	2
	Rollers	2
Architectural Coatings	Air Compressors	1

- To evaluate Project compliance with SCAQMD Rule 403 for fugitive dust control, the Project utilized the mitigation option of watering the Project site three times daily which achieves a control efficiency of 61 percent for PM-10 and PM-2.5 emissions. Two (2) one-way vendor trips were added to the grading and paving activity to account for water truck trips.

The results of this analysis are summarized below.

Table 2 – Estimated Maximum Daily Construction Emissions

Activity	Peak Daily Emissions (lb/day)					
	VOC	NO _x	CO	SO ₂	PM-10	PM-2.5
SCAQMD Daily Construction Thresholds	75	100	550	150	150	55
Grading	6.57	75.08	50.45	0.06	6.66	4.71
Building Construction	4.41	33.62	30.85	0.06	4.08	2.54
Architectural Coatings	51.22	3.31	4.32	0.01	0.62	0.36
Paving	2.16	22.63	15.85	0.02	1.44	1.21
Maximum¹	55.63	75.08	50.45	0.08	6.66	4.71
Exceeds Threshold?	No	No	No	No	No	No

Note: ¹ Maximum emissions are the greater of grading alone or building construction and architectural coating or building construction and paving since these activities overlap.

As shown in the table above, the emissions from construction of the Project are below the SCAQMD daily construction thresholds for all the criteria pollutants.

Long-Term Analysis

Long-term emissions are evaluated at build-out of a project. The Project is assumed to be operational in 2016. Mobile source emissions refer to on-road motor vehicle emissions generated from the Project's traffic and area based on the trip generation provided in the Project-specific Traffic Impact Analysis.² Area source emissions from the Project include stationary combustion emissions of natural gas used for space and water heating (shown in a separate row as energy), yard and landscape maintenance, consumer use of solvents and personal care products, and an average building square footage to be repainted each year. CalEEMod computes area source emissions based upon default factors and land use assumptions. CalEEMod defaults were utilized with the exception of fireplaces, which were assumed to be absent from the Project. In addition, the Project's energy emissions were adjusted to account for the increased efficiency related to the 2013 Title 24 standards.³ Separate emissions were computed for both the summer and winter.

Table 3 – Estimated Daily Project Operation Emissions (Summer)

Source	Peak Daily Emissions (lb/day)					
	VOC	NO _x	CO	SO ₂	PM-10	PM-2.5
SCAQMD Daily Thresholds	55	55	550	150	150	55
Area	5.41	0.22	18.40	0.00	0.10	0.10
Energy	0.07	0.61	0.26	0.00	0.05	0.05
Mobile	6.10	19.25	68.69	0.17	11.68	3.30
Total	11.58	20.08	87.35	0.17	11.83	3.45
Exceeds Threshold?	No	No	No	No	No	No

Note: Emissions reported as zero are rounded and not necessarily equal to zero.

² Albert A. Webb Associates, *Traffic Impact Analysis, Quail Run Apartments*, February 2015.

³ The 2013 Title 24 standards are 25 percent more efficient for residential uses than the previous 2008 standards in CalEEMod. http://www.energy.ca.gov/releases/2012_releases/2012-05-31_energy_commission_approves_more_efficient_buildings_nr.html

Table 4 – Estimated Daily Project Operation Emissions (Winter)

Source	Peak Daily Emissions (lb/day)					
	VOC	NO _x	CO	SO ₂	PM-10	PM-2.5
SCAQMD Daily Thresholds	55	55	550	150	150	55
Area	5.41	0.22	18.40	0.00	0.10	0.10
Energy	0.07	0.61	0.26	0.00	0.05	0.05
Mobile	5.96	20.07	63.87	0.16	11.68	3.30
Total	11.44	20.90	82.53	0.16	11.83	3.45
Exceeds Threshold?	No	No	No	No	No	No

Note: Emissions reported as zero are rounded and not necessarily equal to zero.

Evaluation of the data presented on the above tables indicates that criteria pollutant emissions from operation of this Project will not exceed the SCAQMD regional daily thresholds for any pollutant during summer or winter.

■ Localized Significance Threshold Analysis

Background

As part of the SCAQMD's environmental justice program, attention has been focused on localized effects of air quality. Staff at SCAQMD has developed localized significance threshold (LST) methodology⁴ that can be used by public agencies to determine whether or not a project may generate significant adverse localized air quality impacts (both short- and long-term). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area (SRA). The Project is located near the border of SRA 23.

Short-Term Analysis

According to the LST methodology, only on-site emissions need to be analyzed. Emissions associated with vendor and worker trips are mobile source emissions that occur off site. The emissions analyzed under the LST methodology are NO₂, CO, PM-10, and PM-2.5. SCAQMD has provided LST lookup tables and sample construction scenarios⁵ to allow users to readily determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts for projects five acres or smaller. Although the Project site is larger than five acres, it is anticipated that an area of approximately five acres would be disturbed per day during construction.⁶ Therefore, the sample construction scenario for the five-acre site was modified using Project-specific information such as the construction equipment usage information.

The LST thresholds are estimated using the maximum daily disturbed area (in acres) and the distance of the Project to the nearest sensitive receptors (in meters). The closest sensitive receptors are the existing residences adjacent to portions of the Project site. The closest receptor on the LST look-up tables is 25 meters. According to LST methodology, projects with boundaries closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters. Therefore, a receptor distance of 25 meters (85 feet) was used. The results are summarized below.

⁴ South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, Revised July 2008. (Available at <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>, accessed March 24, 2015.)

⁵ <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds>

⁶ <http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf?sfvrsn=2>

Table 5 – LST Results for Daily Construction Emissions

Pollutant	Peak Daily Emissions (lb/day)			
	NO _x	CO	PM-10	PM-2.5
LST Threshold for 5 acre at 25 meters	270	1,577	13	8
Grading	73.2	41.9	7.2	3.8
Building Construction	29.1	20.3	1.5	1.4
Paving	31.8	21.8	2.1	2.0
Exceeds Threshold?	No	No	No	No

Emissions from construction of the Project will be below the LST established by SCAQMD for the Project.

Long-Term Analysis

This Project involves the construction of residential apartments. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed Project does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term LST analysis is needed.

CO Hot Spots Analysis

A carbon monoxide (CO) “hot spot” is a localized concentration of CO that is above the state or federal 1-hour or 8-hour ambient air quality standards (AAQS). Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles.

Based on the information presented below, a CO “hot spot” analysis is not needed to determine whether the addition of Project related traffic will contribute to an exceedance of either the state or federal AAQS for CO emissions in the Project area.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD’s 2003 Air Quality Management Plan (2003 AQMP)⁷ and the Revised 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan).⁸ As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections (2003 AQMP Appendix V, p. V-4-32). Considering the region’s unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of the 1992 CO Plan and subsequent plan updates and air quality management plans.

In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: Long Beach Blvd. and Imperial Highway (Lynwood); Wilshire Blvd. and Veteran Ave. (Westwood); Sunset Blvd. and Highland Ave. (Hollywood); and La Cienega Blvd. and Century Blvd. (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated in the 1992 CO Plan and subsequent 2003 AQMP was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of

⁷ SCAQMD, 2003 Air Quality Management Plan, August 1, 2003. (Available at <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/2003-aqmp>, accessed March 24, 2015.)

⁸ SCAQMD, Revision to the 1992 Carbon Monoxide Attainment Plan, September 1994. (Available at SCAQMD.)

approximately 100,000 vehicles per day (2003 AQMP Appendix V, Table 4-7). The Los Angeles County Metropolitan Transportation Authority (MTA)⁹ evaluated the LOS in the vicinity of the Wilshire Blvd./Veteran Ave. intersection and found it to be level E at peak morning traffic and Level F at peak afternoon traffic (MTA, Exhibit 2-5 and 2-6). Considering Project-related traffic as well as 2025 General Plan Build-out, the highest average daily trips would be 39,100 on Central Avenue between Canyon Crest Drive and the Project driveway,¹⁰ which is lower than the values studied by SCAQMD. Therefore, none of the roadway segments in the vicinity of the proposed Project site would have daily traffic volumes exceeding those at the intersections modeled in the 2003 AQMP, nor would there be any reason unique to the meteorology to conclude that this intersection would yield higher CO concentrations if modeled in detail. Thus, the Project would not result in CO hot spots.

■ Greenhouse Gas Analysis

Greenhouse gases (GHG) are not presented in lbs/day like criteria pollutants; they are typically evaluated on an annual basis using the metric system. Additionally, unlike the criteria pollutants, GHG do not have adopted significance thresholds associated with them at this time. Several agencies, at various levels, have proposed draft GHG significance thresholds for use in CEQA documents. SCAQMD has been working on GHG thresholds for development projects. In December 2008, the SCAQMD adopted a threshold of 10,000 metric tonnes per year of carbon dioxide equivalents (MTCO₂E/yr) for stationary source projects where SCAQMD is the lead agency. The most recent draft proposal was in September 2010¹¹ and included significance thresholds for residential, commercial, and mixed-use projects at 3,500, 1,400, and 3,000 MTCO₂E/yr, respectively. Alternatively, a lead agency has the option to use 3,000 MTCO₂E/yr as a threshold for all non-industrial projects. Although both options are recommended by SCAQMD, a lead agency is advised to use only one option and to use it consistently. The SCAQMD significance thresholds also evaluate construction emissions by amortizing them over an expected project life of 30 years.

The CalEEMod output results for construction-related GHG emissions present the GHG emissions estimates for the Project for CO₂, methane (CH₄), nitrous oxide (N₂O), and CO₂E.¹²

Short-Term Analysis

Construction-Related Emissions

The CalEEMod model calculates GHG emissions from fuel usage by construction equipment and construction-related activities, like construction worker trips, for the Project. The CalEEMod estimate does not analyze emissions from construction-related electricity or natural gas. Construction-related electricity and natural gas emissions vary based on the amount of electric power used during construction and other unknown factors which make them too speculative to quantify.

Table 6 – Project Construction Equipment GHG Emissions

Year	Metric Tons per year (MT/yr)			
	Total CO ₂	Total CH ₄	Total N ₂ O	Total CO ₂ E
2016	574.73	0.12	0.00	577.24
			Amortized	19.24

Evaluation of the table above indicates that an estimated 577.24 MTCO₂E will occur from Project construction equipment over the course of the estimated construction period. Since the draft SCAQMD

⁹ Metropolitan Transportation Authority, *2004 Congestion Management Plan for Los Angeles County*, Adopted July 22, 2004. (Available at http://www.metro.net/images/cmp_2004.pdf, accessed March 24, 2015.)

¹⁰ Albert A. Webb Associates, *Traffic Impact Analysis, Quail Run Apartments*, February 2015.

¹¹ [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2)

¹² CO₂E is the sum of CO₂ emissions estimated plus the sum of CH₄ and N₂O emissions estimated multiplied by their respective global warming potential (GWP).

GHG threshold Guidance document released in October 2008¹³ recommends that construction emissions be amortized for a project lifetime of 30 years to ensure that GHG reduction measures address construction GHG emissions as part of the operational reduction strategies. Therefore, the total GHG emissions from Project construction were amortized and are included in **Table 8**, below.

Long-Term Analysis

Area Source Emissions

CalEEMod estimates the GHG emissions associated with area sources which include landscape equipment emissions, architectural coating, consumer products, and hearths. Landscape equipment servicing the Project site create CO₂ resulting from fuel combustion based on the Project's land uses. Consumer products consist of consumer use of solvents and personal care products and architectural coatings consist of an average building square footage to be repainted each year. Hearth emissions are also included and as stated above the Project is not anticipated to include fireplaces. **Table 8** summarizes the Project's area source emissions.

Energy-Related Emissions

CalEEMod estimates the GHG emissions associated with building electricity and natural gas usage (non-hearth) for each land use type. Electricity and natural gas used in buildings is typically generated at an off-site power plant which indirectly generates GHG emissions. The default energy usage values used in CalEEMod are based on the CEC sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies and reflect 2008 Title 24 improvements (CalEEMod User's Guide, p. 30.). As stated above, the Project's emissions were adjusted to account for the new 2013 Title 24 standards which are 25 percent more efficient than the 2008 standards. The following table summarizes the GHG emissions estimates reported by CalEEMod for the Project.

Table 7 – Energy-Related GHG Emissions

Source	Metric Tons per year (MT/yr)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ E
Electricity	518.39	0.01	0.00	519.36
Natural Gas	128.16	0.00	0.00	128.94
Total	646.55	0.01	0.00	648.30

Note: Emissions reported as zero are rounded and not necessarily equal to zero.

Mobile Source Emissions

CalEEMod estimates the annual GHG emissions from Project-related vehicle usage based on trip generation data contained in defaults or in a project-specific traffic analyses. The weekday trip generation provided in the Project-specific Traffic Study was used and the remaining trip generation data contained in CalEEMod defaults was used herein. **Table 8** shows the mobile source emissions from the Project.

Solid Waste Emissions

CalEEMod also calculates the GHG emissions associated with the disposal of solid waste into landfills based on default data contained within the model for waste disposal rates, composition, and the characteristics of landfills throughout the state. A large percentage of this waste will be diverted from landfills by a variety of means, such as reducing the amount of waste generated, recycling, and/or composting. The remainder of the waste not diverted will be disposed of at a landfill. This analysis assumes a solid waste diversion from the landfills consistent with data provided by the state. Conservatively, this was assumed as 64 percent for the City of Riverside¹⁴, the waste diversion rate reported for the year 2006. **Table 8** shows the solid waste emissions from the Project.

¹³ [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf?sfvrsn=2)

¹⁴ CalRecycle, *Riverside Jurisdiction Diversion / Disposal Rate Detail*, 2006. Available at: <http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversion.aspx>, accessed March 24, 2015.

Water-Related Energy Usage

Electricity is also indirectly used in water supply, treatment, and distribution, as well as wastewater treatment in Southern California and plays a large role in GHG production.

There are three processes necessary to supply potable water to urban users (i.e., residential, commercial, and industrial): (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users. After use, the wastewater is treated and either reused as reclaimed/recycled water or returned to the environment. CalEEMod calculates the GHG emissions from these processes based on default emissions factors and water/wastewater generation rates for a project's location. Default values were used for electricity intensity factor associated with the supply and conveyance of water from its source which assumes that the water is being imported from Northern California. The Project's emissions were adjusted to account for the CalGreen building code which requires a 20 percent reduction in indoor water use. **Table 8** shows the GHG emissions from water-related energy usage for the Project.

Total Project GHG Emissions

As shown on **Table 8 – Total Project-Related GHG Emissions**, using all the emissions quantified above, the total GHG emissions generated from the Project is approximately 2,974.74 MTCO₂E/yr which includes construction-related emissions amortized over a typical project life of 30 years.

Table 8 – Total Project-Related GHG Emissions

Source	Metric Tons per year (MT/yr)			
	CO ₂	CH ₄	N ₂ O	Total CO ₂ E
Amortized Construction	--	--	--	19.24
Area	3.71	0.00	0.00	3.79
Energy	646.55	0.01	0.00	648.30
Mobile	2,123.77	0.07	0.00	2,125.31
Solid Waste	7.40	0.44	0.00	16.57
Water	150.67	0.38	0.01	161.53
Total	2,932.10	0.90	0.01	2,974.74

Note: Emissions reported as zero are rounded and not necessarily equal to zero.

The total GHG emissions from the Project are below the SCAQMD recommended screening level of 3,000 MTCO₂E/yr for non-industrial projects under Option 2. Therefore, the proposed Project will not exceed the more conservative draft GHG screening threshold provided by SCAQMD.

■ Conclusion

The conclusion of this analysis indicates that construction and operation of the proposed Project will not exceed criteria pollutant thresholds established by SCAQMD on a regional or localized level. The Project will also not exceed the draft GHG screening threshold recommended by SCAQMD.

Should you have any questions, please contact me at (951) 686-1070.

CALEEMOD OUTPUT FILES

Quali Run Apts
Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	220.00	Dwelling Unit	18.53	220,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2016
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - disturbed area per site plan

Construction Phase - see table

Off-road Equipment - see table

Off-road Equipment -

Off-road Equipment - see table

Trips and VMT - water truck trips added

Off-road Equipment -

Vehicle Trips - trip rate per traffic study

Woodstoves - no fireplaces proposed with apartments

Construction Off-road Equipment Mitigation - water site 3x daily to reduce 61% PM

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - city waste diversion rate in 2006

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	34.00
tblConstructionPhase	NumDays	300.00	153.00
tblConstructionPhase	NumDays	30.00	64.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	PhaseEndDate	6/16/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	10/31/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	11/30/2016	5/1/2016
tblConstructionPhase	PhaseStartDate	5/2/2016	9/15/2016
tblConstructionPhase	PhaseStartDate	3/31/2016	4/1/2016
tblConstructionPhase	PhaseStartDate	11/2/2016	4/1/2016
tblFireplaces	NumberGas	187.00	0.00
tblFireplaces	NumberNoFireplace	22.00	220.00
tblFireplaces	NumberWood	11.00	0.00
tblGrading	AcresOfGrading	160.00	75.00
tblLandUse	LotAcreage	13.75	18.53
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	11.00	0.00
tblWoodstoves	NumberNoncatalytic	11.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	55.6400	75.0721	50.4474	0.0797	7.5010	3.5889	11.0899	3.5073	3.3018	6.8091	0.0000	7,649.226 1	7,649.226 1	1.9448	0.0000	7,690.067 6
Total	55.6400	75.0721	50.4474	0.0797	7.5010	3.5889	11.0899	3.5073	3.3018	6.8091	0.0000	7,649.226 1	7,649.226 1	1.9448	0.0000	7,690.067 6

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	55.6400	75.0721	50.4474	0.0797	3.0694	3.5889	6.6583	1.4062	3.3018	4.7080	0.0000	7,649.2261	7,649.2261	1.9448	0.0000	7,690.0676
Total	55.6400	75.0721	50.4474	0.0797	3.0694	3.5889	6.6583	1.4062	3.3018	4.7080	0.0000	7,649.2261	7,649.2261	1.9448	0.0000	7,690.0676

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	59.08	0.00	39.96	59.91	0.00	30.86	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809
Energy	0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706
Mobile	6.1019	19.2485	68.6871	0.1677	11.4041	0.2797	11.6838	3.0434	0.2572	3.3005		14,688.5278	14,688.5278	0.4771		14,698.5471
Total	11.5981	20.2260	87.4146	0.1736	11.4041	0.4406	11.8447	3.0434	0.4181	3.4615	0.0000	15,694.2581	15,694.2581	0.5291	0.0178	15,710.8986

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809
Energy	0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811
Mobile	6.1019	19.2485	68.6871	0.1677	11.4041	0.2797	11.6838	3.0434	0.2572	3.3005		14,688.5278	14,688.5278	0.4771		14,698.5471
Total	11.5798	20.0701	87.3483	0.1726	11.4041	0.4280	11.8321	3.0434	0.4055	3.4488	0.0000	15,495.2795	15,495.2795	0.5253	0.0142	15,510.7091

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.16	0.77	0.08	0.58	0.00	2.86	0.11	0.00	3.02	0.36	0.00	1.27	1.27	0.72	20.46	1.27

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	3/30/2016	5	64	
2	Building Construction	Building Construction	4/1/2016	11/1/2016	5	153	
3	Paving	Paving	4/1/2016	5/1/2016	5	21	
4	Architectural Coating	Architectural Coating	9/15/2016	11/1/2016	5	34	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 445,500; Residential Outdoor: 148,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	8.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2649	0.0000	7.2649	3.4444	0.0000	3.4444			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	7.2649	3.5842	10.8491	3.4444	3.2975	6.7419		6,414.9807	6,414.9807	1.9350		6,455.6154

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0156	0.1678	0.1758	4.2000e-004	0.0126	3.2600e-003	0.0158	3.5900e-003	3.0000e-003	6.5900e-003		42.2560	42.2560	2.7000e-004		42.2618
Worker	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173
Total	0.0922	0.2583	1.3100	3.1000e-003	0.2361	4.6600e-003	0.2408	0.0629	4.2800e-003	0.0672		264.1724	264.1724	9.8400e-003		264.3791

3.2 Grading - 2016**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8333	0.0000	2.8333	1.3433	0.0000	1.3433			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	2.8333	3.5842	6.4175	1.3433	3.2975	4.6408	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0156	0.1678	0.1758	4.2000e-004	0.0126	3.2600e-003	0.0158	3.5900e-003	3.0000e-003	6.5900e-003		42.2560	42.2560	2.7000e-004		42.2618
Worker	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173
Total	0.0922	0.2583	1.3100	3.1000e-003	0.2361	4.6600e-003	0.2408	0.0629	4.2800e-003	0.0672		264.1724	264.1724	9.8400e-003		264.3791

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794		2,863.9447	2,863.9447	0.7208		2,879.0804
Total	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794		2,863.9447	2,863.9447	0.7208		2,879.0804

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1866	2.0140	2.1089	5.0500e-003	0.1510	0.0391	0.1901	0.0431	0.0360	0.0791		507.0724	507.0724	3.3000e-003		507.1417
Worker	0.6054	0.7149	8.9603	0.0212	1.7661	0.0110	1.7771	0.4684	0.0102	0.4785		1,753.1390	1,753.1390	0.0756		1,754.7269
Total	0.7920	2.7288	11.0692	0.0262	1.9171	0.0501	1.9672	0.5115	0.0461	0.5576		2,260.2114	2,260.2114	0.0789		2,261.8686

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794	0.0000	2,863.9447	2,863.9447	0.7208		2,879.0804
Total	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794	0.0000	2,863.9447	2,863.9447	0.7208		2,879.0804

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1866	2.0140	2.1089	5.0500e-003	0.1510	0.0391	0.1901	0.0431	0.0360	0.0791		507.0724	507.0724	3.3000e-003		507.1417
Worker	0.6054	0.7149	8.9603	0.0212	1.7661	0.0110	1.7771	0.4684	0.0102	0.4785		1,753.1390	1,753.1390	0.0756		1,754.7269
Total	0.7920	2.7288	11.0692	0.0262	1.9171	0.0501	1.9672	0.5115	0.0461	0.5576		2,260.2114	2,260.2114	0.0789		2,261.8686

3.4 Paving - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0156	0.1678	0.1758	4.2000e-004	0.0126	3.2600e-003	0.0158	3.5900e-003	3.0000e-003	6.5900e-003		42.2560	42.2560	2.7000e-004		42.2618
Worker	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880
Total	0.0730	0.2357	1.0264	2.4300e-003	0.1802	4.3100e-003	0.1846	0.0481	3.9600e-003	0.0520		208.6933	208.6933	7.4500e-003		208.8498

3.4 Paving - 2016**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0156	0.1678	0.1758	4.2000e-004	0.0126	3.2600e-003	0.0158	3.5900e-003	3.0000e-003	6.5900e-003		42.2560	42.2560	2.7000e-004		42.2618
Worker	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880
Total	0.0730	0.2357	1.0264	2.4300e-003	0.1802	4.3100e-003	0.1846	0.0481	3.9600e-003	0.0520		208.6933	208.6933	7.4500e-003		208.8498

3.5 Architectural Coating - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.6101					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4913	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622		375.2641	375.2641	0.0442		376.1932
Total	51.1014	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622		375.2641	375.2641	0.0442		376.1932

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1226	0.1448	1.8147	4.2900e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		355.0661	355.0661	0.0153		355.3877
Total	0.1226	0.1448	1.8147	4.2900e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		355.0661	355.0661	0.0153		355.3877

3.5 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.6101					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4913	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622	0.0000	375.2641	375.2641	0.0442		376.1932
Total	51.1014	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622	0.0000	375.2641	375.2641	0.0442		376.1932

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1226	0.1448	1.8147	4.2900e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		355.0661	355.0661	0.0153		355.3877
Total	0.1226	0.1448	1.8147	4.2900e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		355.0661	355.0661	0.0153		355.3877

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.1019	19.2485	68.6871	0.1677	11.4041	0.2797	11.6838	3.0434	0.2572	3.3005		14,688.5278	14,688.5278	0.4771		14,698.5471
Unmitigated	6.1019	19.2485	68.6871	0.1677	11.4041	0.2797	11.6838	3.0434	0.2572	3.3005		14,688.5278	14,688.5278	0.4771		14,698.5471

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,463.00	1,575.20	1335.40	4,991,776	4,991,776
Total	1,463.00	1,575.20	1,335.40	4,991,776	4,991,776

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462438	0.069856	0.176572	0.170752	0.045136	0.007399	0.012745	0.042494	0.000970	0.001060	0.006446	0.000893	0.003237

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811
NaturalGas Unmitigated	0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8270.92	0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706
Total		0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	6.5796	0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811
Total		0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809
Unmitigated	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5796	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993		32.6815	32.6815	0.0333		33.3809
Total	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5796	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993		32.6815	32.6815	0.0333		33.3809
Total	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Quali Run Apts
Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	220.00	Dwelling Unit	18.53	220,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2016
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - disturbed area per site plan

Construction Phase - see table

Off-road Equipment - see table

Off-road Equipment -

Off-road Equipment - see table

Trips and VMT - water truck trips added

Off-road Equipment -

Vehicle Trips - trip rate per traffic study

Woodstoves - no fireplaces proposed with apartments

Construction Off-road Equipment Mitigation - water site 3x daily to reduce 61% PM

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - city waste diversion rate in 2006

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	34.00
tblConstructionPhase	NumDays	300.00	153.00
tblConstructionPhase	NumDays	30.00	64.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	PhaseEndDate	6/16/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	10/31/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	11/30/2016	5/1/2016
tblConstructionPhase	PhaseStartDate	5/2/2016	9/15/2016
tblConstructionPhase	PhaseStartDate	3/31/2016	4/1/2016
tblConstructionPhase	PhaseStartDate	11/2/2016	4/1/2016
tblFireplaces	NumberGas	187.00	0.00
tblFireplaces	NumberNoFireplace	22.00	220.00
tblFireplaces	NumberWood	11.00	0.00
tblGrading	AcresOfGrading	160.00	75.00
tblLandUse	LotAcreage	13.75	18.53
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	11.00	0.00
tblWoodstoves	NumberNoncatalytic	11.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	55.6188	75.0822	50.3145	0.0776	7.5010	3.5889	11.0899	3.5073	3.3018	6.8091	0.0000	7,479.0932	7,479.0932	1.9448	0.0000	7,519.9348
Total	55.6188	75.0822	50.3145	0.0776	7.5010	3.5889	11.0899	3.5073	3.3018	6.8091	0.0000	7,479.0932	7,479.0932	1.9448	0.0000	7,519.9348

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	55.6188	75.0822	50.3145	0.0776	3.0694	3.5889	6.6584	1.4062	3.3018	4.7080	0.0000	7,479.0932	7,479.0932	1.9448	0.0000	7,519.9348
Total	55.6188	75.0822	50.3145	0.0776	3.0694	3.5889	6.6584	1.4062	3.3018	4.7080	0.0000	7,479.0932	7,479.0932	1.9448	0.0000	7,519.9348

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	59.08	0.00	39.96	59.91	0.00	30.86	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809
Energy	0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706
Mobile	5.9591	20.0721	63.8678	0.1564	11.4041	0.2808	11.6849	3.0434	0.2582	3.3016		13,743.0516	13,743.0516	0.4776		13,753.0820
Total	11.4553	21.0496	82.5954	0.1623	11.4041	0.4417	11.8458	3.0434	0.4191	3.4625	0.0000	14,748.7820	14,748.7820	0.5296	0.0178	14,765.4336

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809
Energy	0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811
Mobile	5.9591	20.0721	63.8678	0.1564	11.4041	0.2808	11.6849	3.0434	0.2582	3.3016		13,743.0516	13,743.0516	0.4776		13,753.0820
Total	11.4371	20.8938	82.5290	0.1613	11.4041	0.4291	11.8332	3.0434	0.4065	3.4499	0.0000	14,549.8034	14,549.8034	0.5258	0.0142	14,565.2441

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.16	0.74	0.08	0.62	0.00	2.85	0.11	0.00	3.01	0.36	0.00	1.35	1.35	0.72	20.46	1.36

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	3/30/2016	5	64	
2	Building Construction	Building Construction	4/1/2016	11/1/2016	5	153	
3	Paving	Paving	4/1/2016	5/1/2016	5	21	
4	Architectural Coating	Architectural Coating	9/15/2016	11/1/2016	5	34	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 445,500; Residential Outdoor: 148,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	8.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.2649	0.0000	7.2649	3.4444	0.0000	3.4444			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	7.2649	3.5842	10.8491	3.4444	3.2975	6.7419		6,414.9807	6,414.9807	1.9350		6,455.6154

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0166	0.1721	0.1998	4.2000e-004	0.0126	3.2900e-003	0.0159	3.5900e-003	3.0200e-003	6.6200e-003		41.8903	41.8903	2.8000e-004		41.8963
Worker	0.0731	0.0964	0.9773	2.4500e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		202.7974	202.7974	9.5700e-003		202.9984
Total	0.0897	0.2685	1.1771	2.8700e-003	0.2361	4.6900e-003	0.2408	0.0629	4.3000e-003	0.0672		244.6877	244.6877	9.8500e-003		244.8947

3.2 Grading - 2016**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8333	0.0000	2.8333	1.3433	0.0000	1.3433			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	2.8333	3.5842	6.4175	1.3433	3.2975	4.6408	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0166	0.1721	0.1998	4.2000e-004	0.0126	3.2900e-003	0.0159	3.5900e-003	3.0200e-003	6.6200e-003		41.8903	41.8903	2.8000e-004		41.8963
Worker	0.0731	0.0964	0.9773	2.4500e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		202.7974	202.7974	9.5700e-003		202.9984
Total	0.0897	0.2685	1.1771	2.8700e-003	0.2361	4.6900e-003	0.2408	0.0629	4.3000e-003	0.0672		244.6877	244.6877	9.8500e-003		244.8947

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794		2,863.9447	2,863.9447	0.7208		2,879.0804
Total	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794		2,863.9447	2,863.9447	0.7208		2,879.0804

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1989	2.0646	2.3979	5.0100e-003	0.1510	0.0394	0.1904	0.0431	0.0363	0.0794		502.6840	502.6840	3.4100e-003		502.7556
Worker	0.5775	0.7615	7.7206	0.0193	1.7661	0.0110	1.7771	0.4684	0.0102	0.4785		1,602.0993	1,602.0993	0.0756		1,603.6873
Total	0.7765	2.8261	10.1185	0.0244	1.9171	0.0505	1.9676	0.5115	0.0464	0.5579		2,104.7833	2,104.7833	0.0790		2,106.4429

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794	0.0000	2,863.9447	2,863.9447	0.7208		2,879.0804
Total	3.6240	30.7934	19.7845	0.0287		2.1098	2.1098		1.9794	1.9794	0.0000	2,863.9447	2,863.9447	0.7208		2,879.0804

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1989	2.0646	2.3979	5.0100e-003	0.1510	0.0394	0.1904	0.0431	0.0363	0.0794		502.6840	502.6840	3.4100e-003		502.7556
Worker	0.5775	0.7615	7.7206	0.0193	1.7661	0.0110	1.7771	0.4684	0.0102	0.4785		1,602.0993	1,602.0993	0.0756		1,603.6873
Total	0.7765	2.8261	10.1185	0.0244	1.9171	0.0505	1.9676	0.5115	0.0464	0.5579		2,104.7833	2,104.7833	0.0790		2,106.4429

3.4 Paving - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0166	0.1721	0.1998	4.2000e-004	0.0126	3.2900e-003	0.0159	3.5900e-003	3.0200e-003	6.6200e-003		41.8903	41.8903	2.8000e-004		41.8963
Worker	0.0548	0.0723	0.7330	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		152.0980	152.0980	7.1800e-003		152.2488
Total	0.0714	0.2444	0.9328	2.2600e-003	0.1802	4.3400e-003	0.1846	0.0481	3.9800e-003	0.0521		193.9884	193.9884	7.4600e-003		194.1451

3.4 Paving - 2016**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0166	0.1721	0.1998	4.2000e-004	0.0126	3.2900e-003	0.0159	3.5900e-003	3.0200e-003	6.6200e-003		41.8903	41.8903	2.8000e-004		41.8963
Worker	0.0548	0.0723	0.7330	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		152.0980	152.0980	7.1800e-003		152.2488
Total	0.0714	0.2444	0.9328	2.2600e-003	0.1802	4.3400e-003	0.1846	0.0481	3.9800e-003	0.0521		193.9884	193.9884	7.4600e-003		194.1451

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.6101					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4913	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622		375.2641	375.2641	0.0442		376.1932
Total	51.1014	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622		375.2641	375.2641	0.0442		376.1932

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1170	0.1542	1.5637	3.9200e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		324.4758	324.4758	0.0153		324.7974
Total	0.1170	0.1542	1.5637	3.9200e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		324.4758	324.4758	0.0153		324.7974

3.5 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.6101					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4913	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622	0.0000	375.2641	375.2641	0.0442		376.1932
Total	51.1014	3.1630	2.5119	3.9600e-003		0.2622	0.2622		0.2622	0.2622	0.0000	375.2641	375.2641	0.0442		376.1932

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1170	0.1542	1.5637	3.9200e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		324.4758	324.4758	0.0153		324.7974
Total	0.1170	0.1542	1.5637	3.9200e-003	0.3577	2.2400e-003	0.3599	0.0949	2.0600e-003	0.0969		324.4758	324.4758	0.0153		324.7974

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.9591	20.0721	63.8678	0.1564	11.4041	0.2808	11.6849	3.0434	0.2582	3.3016		13,743.0516	13,743.0516	0.4776		13,753.0820
Unmitigated	5.9591	20.0721	63.8678	0.1564	11.4041	0.2808	11.6849	3.0434	0.2582	3.3016		13,743.0516	13,743.0516	0.4776		13,753.0820

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,463.00	1,575.20	1335.40	4,991,776	4,991,776
Total	1,463.00	1,575.20	1,335.40	4,991,776	4,991,776

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462438	0.069856	0.176572	0.170752	0.045136	0.007399	0.012745	0.042494	0.000970	0.001060	0.006446	0.000893	0.003237

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811
NaturalGas Unmitigated	0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	8270.92	0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706
Total		0.0892	0.7622	0.3244	4.8700e-003		0.0616	0.0616		0.0616	0.0616		973.0488	973.0488	0.0187	0.0178	978.9706

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	6.5796	0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811
Total		0.0710	0.6064	0.2580	3.8700e-003		0.0490	0.0490		0.0490	0.0490		774.0703	774.0703	0.0148	0.0142	778.7811

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809
Unmitigated	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5796	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993		32.6815	32.6815	0.0333		33.3809
Total	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4714					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.3560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.5796	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993		32.6815	32.6815	0.0333		33.3809
Total	5.4070	0.2153	18.4032	9.6000e-004		0.0993	0.0993		0.0993	0.0993	0.0000	32.6815	32.6815	0.0333	0.0000	33.3809

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

Quali Run Apts
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	220.00	Dwelling Unit	18.53	220,000.00	629

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2016
Utility Company	Riverside Public Utilities				
CO2 Intensity (lb/MWhr)	1325.65	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - disturbed area per site plan

Construction Phase - see table

Off-road Equipment - see table

Off-road Equipment -

Off-road Equipment - see table

Trips and VMT - water truck trips added

Off-road Equipment -

Vehicle Trips - trip rate per traffic study

Woodstoves - no fireplaces proposed with apartments

Construction Off-road Equipment Mitigation - water site 3x daily to reduce 61% PM

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - city waste diversion rate in 2006

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	34.00
tblConstructionPhase	NumDays	300.00	153.00
tblConstructionPhase	NumDays	30.00	64.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	PhaseEndDate	6/16/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	10/31/2016	11/1/2016
tblConstructionPhase	PhaseEndDate	11/30/2016	5/1/2016
tblConstructionPhase	PhaseStartDate	5/2/2016	9/15/2016
tblConstructionPhase	PhaseStartDate	3/31/2016	4/1/2016
tblConstructionPhase	PhaseStartDate	11/2/2016	4/1/2016
tblFireplaces	NumberGas	187.00	0.00
tblFireplaces	NumberNoFireplace	22.00	220.00
tblFireplaces	NumberWood	11.00	0.00
tblGrading	AcresOfGrading	160.00	75.00
tblLandUse	LotAcreage	13.75	18.53
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	11.00	0.00
tblWoodstoves	NumberNoncatalytic	11.00	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.4372	5.2745	4.1615	6.5400e-003	0.3920	0.2979	0.6899	0.1528	0.2773	0.4302	0.0000	574.7304	574.7304	0.1196	0.0000	577.2420
Total	1.4372	5.2745	4.1615	6.5400e-003	0.3920	0.2979	0.6899	0.1528	0.2773	0.4302	0.0000	574.7304	574.7304	0.1196	0.0000	577.2420

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	1.4372	5.2745	4.1615	6.5400e-003	0.2502	0.2979	0.5481	0.0856	0.2773	0.3629	0.0000	574.7299	574.7299	0.1196	0.0000	577.2416
Total	1.4372	5.2745	4.1615	6.5400e-003	0.2502	0.2979	0.5481	0.0856	0.2773	0.3629	0.0000	574.7299	574.7299	0.1196	0.0000	577.2416

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	36.18	0.00	20.56	44.00	0.00	15.63	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9535	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853
Energy	0.0163	0.1391	0.0592	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	700.5419	700.5419	0.0149	5.4000e-003	702.5270
Mobile	0.9621	3.4618	11.1275	0.0267	1.8932	0.0472	1.9404	0.5059	0.0434	0.5493	0.0000	2,123.773 2	2,123.773 2	0.0730	0.0000	2,125.306 2
Waste						0.0000	0.0000		0.0000	0.0000	20.5427	0.0000	20.5427	1.2140	0.0000	46.0375
Water						0.0000	0.0000		0.0000	0.0000	4.5475	172.5973	177.1447	0.4709	0.0118	190.6935
Total	1.9318	3.6278	13.4871	0.0277	1.8932	0.0709	1.9641	0.5059	0.0671	0.5730	25.0902	3,000.618 3	3,025.708 5	1.7766	0.0172	3,068.349 5

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9535	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853
Energy	0.0130	0.1107	0.0471	7.1000e-004		8.9500e-003	8.9500e-003		8.9500e-003	8.9500e-003	0.0000	646.5459	646.5459	0.0138	4.7000e-003	648.2914
Mobile	0.9621	3.4618	11.1275	0.0267	1.8932	0.0472	1.9404	0.5059	0.0434	0.5493	0.0000	2,123.7732	2,123.7732	0.0730	0.0000	2,125.3062
Waste						0.0000	0.0000		0.0000	0.0000	7.3954	0.0000	7.3954	0.4371	0.0000	16.5735
Water						0.0000	0.0000		0.0000	0.0000	3.6380	147.0354	150.6734	0.3769	9.4900e-003	161.5291
Total	1.9285	3.5994	13.4750	0.0275	1.8932	0.0686	1.9618	0.5059	0.0648	0.5707	11.0334	2,921.0605	2,932.0939	0.9045	0.0142	2,955.4854

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.17	0.78	0.09	0.65	0.00	3.24	0.12	0.00	3.43	0.40	56.03	2.65	3.09	49.09	17.55	3.68

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2016	3/30/2016	5	64	
2	Building Construction	Building Construction	4/1/2016	11/1/2016	5	153	
3	Paving	Paving	4/1/2016	5/1/2016	5	21	
4	Architectural Coating	Architectural Coating	9/15/2016	11/1/2016	5	34	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 445,500; Residential Outdoor: 148,500; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	8.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	8.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	158.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	32.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Grading - 2016**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2325	0.0000	0.2325	0.1102	0.0000	0.1102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2073	2.3940	1.5724	1.9700e-003		0.1147	0.1147		0.1055	0.1055	0.0000	186.2263	186.2263	0.0562	0.0000	187.4060
Total	0.2073	2.3940	1.5724	1.9700e-003	0.2325	0.1147	0.3472	0.1102	0.1055	0.2157	0.0000	186.2263	186.2263	0.0562	0.0000	187.4060

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	5.6100e-003	6.5700e-003	1.0000e-005	4.0000e-004	1.0000e-004	5.0000e-004	1.1000e-004	1.0000e-004	2.1000e-004	0.0000	1.2222	1.2222	1.0000e-005	0.0000	1.2224
Worker	2.2000e-003	3.2200e-003	0.0324	8.0000e-005	7.0300e-003	4.0000e-005	7.0800e-003	1.8700e-003	4.0000e-005	1.9100e-003	0.0000	5.9675	5.9675	2.8000e-004	0.0000	5.9733
Total	2.7300e-003	8.8300e-003	0.0390	9.0000e-005	7.4300e-003	1.4000e-004	7.5800e-003	1.9800e-003	1.4000e-004	2.1200e-003	0.0000	7.1897	7.1897	2.9000e-004	0.0000	7.1957

3.2 Grading - 2016**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0907	0.0000	0.0907	0.0430	0.0000	0.0430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2073	2.3940	1.5724	1.9700e-003		0.1147	0.1147		0.1055	0.1055	0.0000	186.2261	186.2261	0.0562	0.0000	187.4057
Total	0.2073	2.3940	1.5724	1.9700e-003	0.0907	0.1147	0.2054	0.0430	0.1055	0.1485	0.0000	186.2261	186.2261	0.0562	0.0000	187.4057

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3000e-004	5.6100e-003	6.5700e-003	1.0000e-005	4.0000e-004	1.0000e-004	5.0000e-004	1.1000e-004	1.0000e-004	2.1000e-004	0.0000	1.2222	1.2222	1.0000e-005	0.0000	1.2224
Worker	2.2000e-003	3.2200e-003	0.0324	8.0000e-005	7.0300e-003	4.0000e-005	7.0800e-003	1.8700e-003	4.0000e-005	1.9100e-003	0.0000	5.9675	5.9675	2.8000e-004	0.0000	5.9733
Total	2.7300e-003	8.8300e-003	0.0390	9.0000e-005	7.4300e-003	1.4000e-004	7.5800e-003	1.9800e-003	1.4000e-004	2.1200e-003	0.0000	7.1897	7.1897	2.9000e-004	0.0000	7.1957

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2772	2.3557	1.5135	2.1900e-003		0.1614	0.1614		0.1514	0.1514	0.0000	198.7567	198.7567	0.0500	0.0000	199.8071
Total	0.2772	2.3557	1.5135	2.1900e-003		0.1614	0.1614		0.1514	0.1514	0.0000	198.7567	198.7567	0.0500	0.0000	199.8071

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0151	0.1610	0.1885	3.9000e-004	0.0114	3.0000e-003	0.0144	3.2600e-003	2.7600e-003	6.0200e-003	0.0000	35.0627	35.0627	2.3000e-004	0.0000	35.0676
Worker	0.0415	0.0607	0.6122	1.5000e-003	0.1329	8.4000e-004	0.1337	0.0353	7.8000e-004	0.0361	0.0000	112.7011	112.7011	5.2500e-003	0.0000	112.8113
Total	0.0566	0.2218	0.8007	1.8900e-003	0.1442	3.8400e-003	0.1481	0.0385	3.5400e-003	0.0421	0.0000	147.7638	147.7638	5.4800e-003	0.0000	147.8789

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2772	2.3557	1.5135	2.1900e-003		0.1614	0.1614		0.1514	0.1514	0.0000	198.7565	198.7565	0.0500	0.0000	199.8069
Total	0.2772	2.3557	1.5135	2.1900e-003		0.1614	0.1614		0.1514	0.1514	0.0000	198.7565	198.7565	0.0500	0.0000	199.8069

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0151	0.1610	0.1885	3.9000e-004	0.0114	3.0000e-003	0.0144	3.2600e-003	2.7600e-003	6.0200e-003	0.0000	35.0627	35.0627	2.3000e-004	0.0000	35.0676
Worker	0.0415	0.0607	0.6122	1.5000e-003	0.1329	8.4000e-004	0.1337	0.0353	7.8000e-004	0.0361	0.0000	112.7011	112.7011	5.2500e-003	0.0000	112.8113
Total	0.0566	0.2218	0.8007	1.8900e-003	0.1442	3.8400e-003	0.1481	0.0385	3.5400e-003	0.0421	0.0000	147.7638	147.7638	5.4800e-003	0.0000	147.8789

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0219	0.2351	0.1556	2.3000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	22.0645	22.0645	6.6600e-003	0.0000	22.2043
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0219	0.2351	0.1556	2.3000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	22.0645	22.0645	6.6600e-003	0.0000	22.2043

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	1.8400e-003	2.1600e-003	0.0000	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.4010	0.4010	0.0000	0.0000	0.4011
Worker	5.4000e-004	7.9000e-004	7.9800e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.4686	1.4686	7.0000e-005	0.0000	1.4700
Total	7.1000e-004	2.6300e-003	0.0101	2.0000e-005	1.8600e-003	4.0000e-005	1.9000e-003	5.0000e-004	4.0000e-005	5.4000e-004	0.0000	1.8696	1.8696	7.0000e-005	0.0000	1.8711

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0219	0.2351	0.1556	2.3000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	22.0645	22.0645	6.6600e-003	0.0000	22.2042
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0219	0.2351	0.1556	2.3000e-004		0.0132	0.0132		0.0122	0.0122	0.0000	22.0645	22.0645	6.6600e-003	0.0000	22.2042

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	1.8400e-003	2.1600e-003	0.0000	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	7.0000e-005	0.0000	0.4010	0.4010	0.0000	0.0000	0.4011
Worker	5.4000e-004	7.9000e-004	7.9800e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.4686	1.4686	7.0000e-005	0.0000	1.4700
Total	7.1000e-004	2.6300e-003	0.0101	2.0000e-005	1.8600e-003	4.0000e-005	1.9000e-003	5.0000e-004	4.0000e-005	5.4000e-004	0.0000	1.8696	1.8696	7.0000e-005	0.0000	1.8711

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8604					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3500e-003	0.0538	0.0427	7.0000e-005		4.4600e-003	4.4600e-003		4.4600e-003	4.4600e-003	0.0000	5.7874	5.7874	6.8000e-004	0.0000	5.8017
Total	0.8687	0.0538	0.0427	7.0000e-005		4.4600e-003	4.4600e-003		4.4600e-003	4.4600e-003	0.0000	5.7874	5.7874	6.8000e-004	0.0000	5.8017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8700e-003	2.7300e-003	0.0276	7.0000e-005	5.9800e-003	4.0000e-005	6.0200e-003	1.5900e-003	3.0000e-005	1.6200e-003	0.0000	5.0723	5.0723	2.4000e-004	0.0000	5.0773
Total	1.8700e-003	2.7300e-003	0.0276	7.0000e-005	5.9800e-003	4.0000e-005	6.0200e-003	1.5900e-003	3.0000e-005	1.6200e-003	0.0000	5.0723	5.0723	2.4000e-004	0.0000	5.0773

3.5 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8604					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3500e-003	0.0538	0.0427	7.0000e-005		4.4600e-003	4.4600e-003		4.4600e-003	4.4600e-003	0.0000	5.7874	5.7874	6.8000e-004	0.0000	5.8017
Total	0.8687	0.0538	0.0427	7.0000e-005		4.4600e-003	4.4600e-003		4.4600e-003	4.4600e-003	0.0000	5.7874	5.7874	6.8000e-004	0.0000	5.8017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8700e-003	2.7300e-003	0.0276	7.0000e-005	5.9800e-003	4.0000e-005	6.0200e-003	1.5900e-003	3.0000e-005	1.6200e-003	0.0000	5.0723	5.0723	2.4000e-004	0.0000	5.0773
Total	1.8700e-003	2.7300e-003	0.0276	7.0000e-005	5.9800e-003	4.0000e-005	6.0200e-003	1.5900e-003	3.0000e-005	1.6200e-003	0.0000	5.0723	5.0723	2.4000e-004	0.0000	5.0773

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9621	3.4618	11.1275	0.0267	1.8932	0.0472	1.9404	0.5059	0.0434	0.5493	0.0000	2,123.773 2	2,123.773 2	0.0730	0.0000	2,125.306 2
Unmitigated	0.9621	3.4618	11.1275	0.0267	1.8932	0.0472	1.9404	0.5059	0.0434	0.5493	0.0000	2,123.773 2	2,123.773 2	0.0730	0.0000	2,125.306 2

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	1,463.00	1,575.20	1335.40	4,991,776	4,991,776
Total	1,463.00	1,575.20	1,335.40	4,991,776	4,991,776

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.462438	0.069856	0.176572	0.170752	0.045136	0.007399	0.012745	0.042494	0.000970	0.001060	0.006446	0.000893	0.003237

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	518.3899	518.3899	0.0113	2.3500e-003	519.3554
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	539.4427	539.4427	0.0118	2.4400e-003	540.4474
NaturalGas Mitigated	0.0130	0.1107	0.0471	7.1000e-004		8.9500e-003	8.9500e-003		8.9500e-003	8.9500e-003	0.0000	128.1560	128.1560	2.4600e-003	2.3500e-003	128.9360
NaturalGas Unmitigated	0.0163	0.1391	0.0592	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.0992	161.0992	3.0900e-003	2.9500e-003	162.0796

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	3.01888e+006	0.0163	0.1391	0.0592	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.0992	161.0992	3.0900e-003	2.9500e-003	162.0796
Total		0.0163	0.1391	0.0592	8.9000e-004		0.0113	0.0113		0.0113	0.0113	0.0000	161.0992	161.0992	3.0900e-003	2.9500e-003	162.0796

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	2.40155e+006	0.0130	0.1107	0.0471	7.1000e-004		8.9500e-003	8.9500e-003		8.9500e-003	8.9500e-003	0.0000	128.1560	128.1560	2.4600e-003	2.3500e-003	128.9360
Total		0.0130	0.1107	0.0471	7.1000e-004		8.9500e-003	8.9500e-003		8.9500e-003	8.9500e-003	0.0000	128.1560	128.1560	2.4600e-003	2.3500e-003	128.9360

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	897120	539.4427	0.0118	2.4400e-003	540.4474
Total		539.4427	0.0118	2.4400e-003	540.4474

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	862109	518.3899	0.0113	2.3500e-003	519.3554
Total		518.3899	0.0113	2.3500e-003	519.3554

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9535	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853
Unmitigated	0.9535	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853

6.2 Area by SubCategory**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0860					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0725	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853
Total	0.9535	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0860					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0725	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853
Total	0.9535	0.0269	2.3004	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.7060	3.7060	3.7800e-003	0.0000	3.7853

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	150.6734	0.3769	9.4900e-003	161.5291
Unmitigated	177.1447	0.4709	0.0118	190.6935

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	14.3339 / 9.03658	177.1447	0.4709	0.0118	190.6935
Total		177.1447	0.4709	0.0118	190.6935

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	11.4671 / 9.03658	150.6734	0.3769	9.4900e-003	161.5291
Total		150.6734	0.3769	9.4900e-003	161.5291

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.3954	0.4371	0.0000	16.5735
Unmitigated	20.5427	1.2140	0.0000	46.0375

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	101.2	20.5427	1.2140	0.0000	46.0375
Total		20.5427	1.2140	0.0000	46.0375

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	36.432	7.3954	0.4371	0.0000	16.5735
Total		7.3954	0.4371	0.0000	16.5735

9.0 Operational Offroad

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