

**ATTACHMENT F**  
**JULY 13, 2022 PLANNING COMMISSION STAFF REPORT**



## **PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT**

### **STAFF REPORT**

**DATE:** JULY 13, 2022

**TO:** PLANNING COMMISSION

**FROM:** JENNIFER PAIGE, AICP, ACTING DIRECTOR OF PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT

**SUBJECT:** PLN2020-00127; PLANNED DEVELOPMENT #39 (AFFINITY PROJECT)  
465-577 SOUTH ARROYO PARKWAY

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### **RECOMMENDATION**

It is recommended that the Planning Commission:

1. Recommend that the City Council certify the Final Environmental Impact Report and adopt the accompanying Mitigation Monitoring and Reporting Program;
2. Recommend that the City Council adopt the Findings in Attachment A to approve a Zoning Map Amendment to reclassify the project site from CD-6 to PD-39 (Affinity Planned Development) with the Conditions of Approval in Attachment B;
3. Recommend that the City Council adopt the Findings in Attachment A to approve the PD Plan for PD-39 with the Conditions of Approval in Attachment B; and
4. Recommend that the City Council adopt the Findings in Attachment A to approve the Variance for Historic Resources, subject to the Conditions of Approval in Attachment B.

### **BACKGROUND**

The applicant, The Arroyo Parkway, LLC, has submitted applications for a Planned Development (PD) District and Variance for Historic Resources (VHR) on a 3.3 acre site consisting of five parcels (5722-008-019, 5722-008-002, 5722-008-012, 5722-008-017, and 5722-008-016). The applications are to facilitate the Affinity Project (Project), which proposes demolition of six (of the nine) existing commercial buildings, and construction of two seven-story buildings consisting of medical office uses, assisted living and independent living uses (including up to 95 senior housing units), and ground floor commercial uses. Included is the ability to exchange the medical office uses for up to 197 residential dwelling units. Up to five new levels of subterranean parking would accommodate the uses. Three existing buildings would be retained as part of the Project including the Whole Foods Market and an associated subterranean parking structure at 465 South Arroyo Parkway, and two historic structures at 501 and 523 South Arroyo Parkway. Establishment of the

PD zoning district requires an amendment to the zoning map to reclassify the Project site to PD, and approval of a PD Plan. The PD Plan prescribes the applicable land use and development standards. The VHR is a request for relief from maximum allowed building heights associated with the preservation and reuse of existing historic structures.

## **LOCATION AND SETTING**

The Project site is located between 465 and 577 South Arroyo Parkway and is bound by East Bellevue Drive on the north, South Arroyo Parkway on the east, East California Boulevard on the south, and the Metro L Line on the west. The Project site is developed with nine commercial buildings that are one or two stories in height. Existing uses include a Whole Foods Market grocery store, retail sales, restaurants, and animal services. All existing land uses have surface parking except for the Whole Foods Market, which has a 275-space, subterranean parking structure for its use.

The Project area is an urban environment, and the site and surrounding area are fully built out with a broad mix of land uses. Commercial land uses are primarily located to the north, including retail, services, and restaurants. Other land uses to the north include medical offices, Pasadena Humane Society, Central Park, and single- and multi-family residential land uses. Commercial land uses are located opposite the Project site on Arroyo Parkway. Single- and multi-family residential land uses are situated to the east along Marengo Avenue and Arroyo Parkway. Land uses to the south include a mix of commercial, medical office, and single- and multi-family residential land uses. To the west, there is a mix of commercial uses.

The Project site is relatively flat with limited ornamental vegetation present. The site has seven existing points of access, including two on California Boulevard, one on Bellevue Drive, and five on Arroyo Parkway including the Whole Foods Market exit. All of these access points, except the access from Bellevue Drive and the Whole Foods Market exit, are driveways leading to surface parking; the access point on Bellevue Drive leads into the subterranean parking structure serving Whole Foods Market.

## **PROJECT DESCRIPTION**

The Project involves demolition of six (of nine) existing buildings totaling 45,912 square feet (sf), located at 491, 495, 499, 503, 541, and 577 South Arroyo Parkway, and construction of two new buildings:

- Building A: a 154,000-sf, 7-story (aboveground) medical office building with ground-floor commercial uses;
- Building B: a 184,376-sf, 7-story (aboveground) assisted living building with 85,800 sf of assisted living uses and 98,576 sf of independent living uses including up to 95 senior housing units; and
- Up to 850 parking spaces in five subterranean levels.

Alternatively, the proposed PD would allow Building A to be developed with the following:

- Up to 197 residential dwelling units with 3,000 sf of commercial and a sales/leasing management office on the ground floor. Under this option up to 650 parking spaces in four subterranean levels would be constructed.

The proposed site layout and the aboveground height, mass, and other parameters of the Building A design would remain the same, whether occupied by medical office uses or residential dwelling units. It is noted that based on a density of 87 dwelling units per acre (du/acre), 289 units could be constructed. Therefore, if 197 units were constructed in Building A, only 92 senior housing units could be constructed in Building B. Conversely, if 95 senior housing units were constructed in Building B, only 194 units could be constructed in Building A.

Approximately 79,553 square feet of existing development would be retained and integrated into the Project, including the Whole Foods Market and associated subterranean parking structure at 465 South Arroyo Parkway, and two historic structures at 501 and 523 South Arroyo Parkway. The Applicant anticipates that restaurant uses would occupy the historic structures. In retaining these historic structures, the Applicant has requested a Variance for Historic Resources for relief from maximum allowed building heights. Specifically, when measured to the highest parapet, Building A is proposed at a height of 93'6", and Building B is proposed at a height of 90'6", where the maximum allowed is 50' and 65' with height averaging.

The proposed uses within the two new buildings and two historic structures to remain would have three vehicular ingress/egress points, one on California Boulevard and two on South Arroyo Parkway. Each access point from South Arroyo Parkway is proposed with a circular drop-off area, one on the north side of Building A, and one on the north side of Building B. The existing ingress/egress on East Bellevue Drive into the Whole Foods Market parking structure would remain and continue serving the grocery store; this parking structure would remain entirely separate from the newly proposed subterranean parking structure.

Approximately 31,605 square feet of open space, including public and private space would be provided across the Project site. The Project would remove 23 non-protected non-native trees on the Project site and two (of the 17) protected, non-native street trees (removal subject to approval by the Urban Forestry Advisory Committee). The Project would replace trees on private property with 38 new trees throughout the site. The 15 remaining street trees would be protected in place during construction and remain after the Project is implemented.

## **ENTITLEMENTS**

The Project requires Certification of the Final EIR and approval of the following, with the City Council serving as the decision-making body:

1. Zoning Map Amendment: To reclassify the Project site from CD-6 to Planned Development 39 (Affinity Planned Development);
2. PD Plan: To establish allowed and conditionally allowed land uses, development standards, and conditions of approval that are incorporated into Appendix A (Planned Developments) of the Zoning Code; and
3. Variance for Historic Resources: To allow building heights up to 93'6" where the maximum allowed is 50' and 65' with height averaging.

As provided in Zoning Code Section 17.26.020.C (Purpose and Applicability of Special Purpose Zoning Districts – Planned Development (PD) District), the PD zoning district is intended for sites where an applicant proposes, and the City desires, to achieve a particular mix of uses,



appearance, land use compatibility, or special sensitivity to neighborhood character. The rezoning of a site to PD requires simultaneous approval of a PD Plan.

As provided in Zoning Code Section 17.61.080.H (Variances – Variances for Historic Resources) a VHR is intended to accommodate historic resources that are undergoing development, change in use, or are being relocated. This unique type of Variance is designed to provide relief from the strict compliance with the development standards of the Zoning Code that may impair the ability of a historic resource to be properly used or to be relocated onto a new site.

## **PD District and Zoning Map Amendment**

The proposed PD zoning district and accompanying PD Plan involve the Design Commission, Planning Commission, and City Council. The role of the Design Commission is to provide recommendations to the Planning Commission and City Council on aesthetic and urban design issues related to architecture, landscaping, site plan, and related aesthetic issues, as well as historic preservation. Additionally, the Design Commission may comment on cultural resources of a draft environmental study as appropriate. On May 25, 2021, the Design Commission provided advisory comments through the Preliminary Consultation phase that are included as Attachment C. Remaining phases of Design Review (Concept and Final Design Review) would occur subsequent to approval of the Project.

The Planning Commission's role is to consider the application for reclassification to a PD zoning district, and at the same time, consider the proposed PD Plan accompanying the application. The Planning Commission is responsible for making a recommendation to the City Council whether to approve, approve in modified form, or disapprove the proposed amendment and PD Plan. The City Council's role is to consider the Planning Commission's recommendation and to take action to approve, approve in modified form, or disapprove the proposed amendment and accompanying PD Plan. The recommendation and action taken by the Planning Commission and City Council shall be based upon the following two findings in Zoning Code Section 17.74.070 (Findings and Decision):

- 1. The proposed amendment is in conformance with the goals, policies, and objectives of the General Plan; and*
- 2. The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or general welfare of the City.*

## **PD Plan**

A PD Plan prescribes the applicable land use and development standards, and functions as the ordinance adopting the PD zoning district as well as accompanying conditions. Development regulations applicable to the PD district are specified through the PD Plan, except for the following:

- 1. The FAR (floor area ratio) of a PD shall not exceed the FAR allowed on the Land Use Diagram for the project site unless approved by the City Council, but only as high as 3.0, and only when it can be shown the architectural design of the PD is contextual and of a high-quality.*
- 2. The residential density of a PD shall not exceed the residential density allowed on the Land Use Diagram for the project site unless approved by the City Council, but only as high as 87 dwelling units per acre, and only when it can be shown the architectural design*

*of the PD is contextual and of a high-quality. The residential density may also exceed that of the Land Use Diagram if the project is complying with the Density Bonus provisions of Chapter 17.42 (Affordable Housing Incentives and Requirements).*

3. *In the CD district, no PD plan may authorize a greater height than that permitted by Figure 3-8 - Central District Maximum Height.*
4. *The performance standards of Section 17.40.090 shall apply.*

The proposed PD provides maximums for FAR and density that are at or below applicable maximums on the Land Use Diagram. Building heights proposed in excess of maximums are requested through the VHR application. Where approved, the PD Plan would reflect the authorized height limit. The Project would adhere to performance standards.

The proposed PD Plan is provided as Attachment D. The discussion that follows provides an overview of development regulations prescribed in the proposed PD Plan in relation to the current Central District zoning requirements and other related requirements and allowances in the Zoning Code.

### *Land Uses*

Land use requirements in the CD are identified in Table 3-1 (Allowed Uses and Permit Requirements for CD Zoning Districts), Zoning Code Section 17.30.030 (CD District Land Uses and Permit Requirements).

The PD Plan prescribes allowed and conditionally allowed land uses for the PD zoning district. Proposed land uses and their permit requirements are generally consistent with the current CD-6 land use requirements. 'Residential care facilities, general,' 'Life/care facilities,' 'Adult day-care, general' land uses require Conditional Use Permits in the CD-6 zone, and 'Medical Services Extended Care' is not listed. Care related activities associated with these types of classifications are proposed as part of the Project and were considered as part of the review of the Project. Therefore the PD Plan identifies these uses as permitted. Additional land uses included as part of the PD Plan that are not currently listed in CD-6 include, 'Alcohol Beverage Manufacturing,' 'Alcohol Beverage Manufacturing with Accessory Tasting Room,' Custom Manufacturing/Artisan Production,' and 'Wireless Telecommunication Facilities, Co-Located (SCL).'

### *Density*

The CD development standards allow a maximum density of 48 dwelling units per acre (du/acre) pursuant to Figure 3-6 (Central District Maximum Residential Density [dwelling units/acre]), Zoning Code Section 17.30.040 (CD General Development Standards). A density of 48 du/acre allows a maximum of 159 dwelling units based on a site area of 144,853 square feet. The General Plan Land Use Diagram High Mixed Use designation establishes a maximum density of 87 du/acre. A density of 87 du/acre allows for 289 dwelling units based on the site area. The Project proposes up to a maximum of 289 units (inclusive of independent living units). The PD Plan prescribes this maximum for the Project, which is consistent with the maximum on the Land Use Diagram.

## *Setbacks*

The CD development standards require a Type 2 setback along each of the three street frontages that the Project site adjoins (Bellevue Drive, Arroyo Parkway, and California Boulevard) pursuant to Figure 3-7 (Central District Required Setbacks), Zoning Code Section 17.30.040. A Type 2 setback specifies a zero setback for non-residential (including mixed-use) uses, but may be set back up to 5' maximum. No setback is required along the west property line that is interior to the site.

The PD Plan prescribes a 0' minimum or no setback requirement at each street frontage and along the westerly property line. While the PD Plan expresses minimums, the Project has proposed additional building setbacks and recesses to allow for building articulation, and to create space for streetside plazas, patios, and building entrances. In particular, at the intersection of California Boulevard and Arroyo Parkway, portions of Building A are setback 28 feet to create space for entry. Ground floor portions on the north side of Building A are cutout and recessed for more than 90 feet to provide an entry into the building from the adjacent drive access. Northern portions of Building B are designed to be built to the street on Arroyo Parkway. However, substantial portions wrap behind and around the two historic structures to remain. These areas of Building B are setback a minimum of 60 feet from Arroyo Parkway, providing space for streetside plazas and patios.

## *Building Height*

The CD development standards allow a maximum height of 50' and 65' with height averaging pursuant to Figure 3-8 (Central District Maximum Height), Zoning Code Section 17.30.040. In the CD district, no PD Plan may allow a greater height than that permitted by the Central District Specific Plan. The Project proposes heights of the new buildings up to 93'6", and has requested to exceed the maximum allowed through a Variance for Historic Resources. This request is discussed later in this report.

## *Floor Area Ratio (FAR)*

The CD development standards allow a maximum floor area ratio of 1.50 pursuant to Figure 3-9 (Central District Maximum Floor Area Ratio), Zoning Code Section 17.30.040. An FAR of 1.5 allows for 217,280 square feet aboveground based on a site area of 144,853 square feet. The General Plan Land Use Diagram High Mixed Use designation establishes a maximum FAR of 3.0. An FAR of 3.0 allows for 434,559 square feet aboveground. The Project proposes 417,929 square feet aboveground (including Whole Foods, 501 and 523 S. Arroyo Parkway), for a FAR of 2.89. The PD Plan prescribes this maximum for the Project, which is less than the maximum on the Land Use Diagram.

## *Parking*

The Project site is located within the CD Transit Oriented Development (TOD) area pursuant to Figure 3-5 (Central District Transit Oriented Development Area), Zoning Code Section 17.30.030. Within the CD TOD area, there are mandatory and optional parking reductions that establish minimum and maximum parking requirements. Parking ratios used to calculate parking requirements are specific to each land use and are pursuant to Table 4-6 (Off-Street Parking Space Requirements), Zoning Code Section 17.46.040 (Number of Off-Street Parking Spaces Required).

The applicant proposes new subterranean parking levels to accommodate the two new buildings, and the two historic structures to remain at 501 and 523 South Arroyo Parkway. Wholefoods Market would continue to use an existing 275-space subterranean parking structure for its use.

The Project (development of Building A with medical office/commercial) includes medical offices and ground floor commercial uses in Building A, assisted living and independent living uses in Building B, and commercial uses within the two historic structures. To be conservative, ground floor commercial uses in Building A and commercial uses within the historic structures were presumed to be restaurant uses. Medical office uses require 4 parking spaces for every 1,000 square feet of floor area, and restaurant uses require 10 parking spaces for every 1,000 square feet of floor area. The parking ratio for the uses in Building B (assisted living and independent living) are not specified in Table 4-6 of the Zoning Code and are determined through the entitlement process. To determine parking requirements for the independent living units (dwelling units and guest parking) in Building B, the established parking ratios for multi-family use in Table 4-6 of the City's Zoning Code were used as a guide. For the assisted living uses, the Los Angeles County parking requirement for developments with senior citizens and persons with disabilities was applied.

The Project (development of Building A with medical office/commercial) would provide up to 850 parking spaces in five subterranean levels for these uses. Table 1 outlines the required and proposed parking based on the mix of uses.

**Table 1: Project Parking Requirements**

Use	SF/Units	Ratio	Requirement
Medical Office (Building A)	151,000 sf	4:1,000 sf	483-544 <sup>^</sup>
Restaurants (Building A and Historic)	8,882 sf*	10:1,000 sf	71-80 <sup>^</sup>
Assisted/Independent Living (Building B)			
Independent Living	95	1.5-1.75/du	143-166
Assisted Living	85	0.50/du	43
Guest		1:10 units	18
Total Requirement (minimum-maximum)			758-851
New Parking Spaces Proposed			850

\*Includes 3,000 sf of ground floor commercial (Building A), and 5,882 sf historic structures (501/523 S. Arroyo Parkway);

<sup>^</sup>Includes mandatory and optional TOD reductions (10-20%)

The Project with the option of developing Building A with residential/commercial includes up to 197 residential dwelling units and ground floor commercial uses in Building A, assisted living and independent living uses in Building B, and commercial uses within the two historic structures. To be conservative, ground floor commercial uses in Building A and commercial uses within the historic structures were presumed to be restaurant uses. Residential dwelling units were presumed to be equal to or larger than 650 square feet in size requiring 1.5 to 1.75 parking spaces per unit. The Project with Building A residential/commercial would provide up to 650 parking spaces in four subterranean levels for these uses. Table 2 outlines the required and proposed parking based on the mix of uses.

**Table 2: Project with Building A residential/commercial Parking Requirements**

Use	SF/Units	Ratio	Requirement
Residential Dwellings (Building A) Guest	197	1.5-1.75/du 1:10 units	296-345 19
Restaurants (Building A and Historic)	8,882 sf*	10:1,000 sf	71-80^
Assisted/Independent Living (Building B) Independent Living Assisted Living Guest	92# 85	1.5-1.75/du 0.50/du 1:10 units	138-161 43 17
Total Requirement (minimum-maximum)			584-665
New Parking Spaces Proposed			650

\*Includes 3,000 sf of ground floor commercial (Building A), and 5,882 sf historic structures (501/523 S. Arroyo Parkway); #289 (197 + 92) units maximum between Building A residential and Building B independent living units; ^Includes mandatory and optional TOD reductions (10-20%)

The PD Plan prescribes parking. Parking requirements for individual uses would continue to follow established ratios in the Zoning Code, with the exception of Building B, assisted living, which is identified above. In addition, the PD Plan prescribes allowances for automated, valet, tandem, triple stack, and compact parking within the development.

### *Open Space*

Where Building A is developed for up to 197 residential dwelling units, it would be subject to mixed-use standards, Zoning Code Section 17.50.160 (Mixed-Use Projects). The PD Plan prescribes this Section as applicable. The mixed-use standards regulate location and depth of commercial uses, ground floor heights, community space requirements, requirements pertaining to balconies and parking, lighting, noise, loading and refuse. The Project would comply with all applicable requirements with the exception of the following that are specifically prescribed in the PD Plan.

**Table 3: Minimum Community Space Requirements**

Section	Requirement	PD Plan
17.50.160.H.2	A minimum of 150 square feet of community space for each dwelling unit	A minimum of 140 square feet of community space for each dwelling unit
17.50.160.H.4	The private open space shall not exceed 30 percent of the total requirement for community space.	The private open space shall not exceed 60 percent of the total requirement for community space.

Based on the availability of 31,605 square feet of open space, the Project has made a substantial commitment. The requirement prescribed in the PD Plan addresses the intent of ensuring compatibility between a mix uses.

### *Draft Central District Specific Plan*

The Central District Specific Plan (CDSP) is currently in the process of being updated and will be presented to the Planning Commission and City Council at a future meeting for consideration. The draft CDSP has the Project site located within a mixed-use neighborhood. The Project is within the development intensities prescribed in the draft CDSP, with the exception of height, as summarized in Table 4.

**Table 4: Development Standards Compared**

Standard	Project and Project Exchange	Draft CDSP (CD-MU-N)
Density (max)	87 du/acre	87 du/acre
FAR (max)	2.89	3.0
Height (max)	93'6"	63' (78' w/ height averaging)
Setbacks		
Bellevue (N)	0'	0 – 5'
Arroyo Parkway (E)	0'	0 – 3'
California (S)	0'	0 – 5'
Interior (W)	10'	None required

**Variance for Historic Resources (VHR)**

The Project proposes construction of two new buildings with maximum building heights that range from 93 feet 6 inches (Building A) to 90 feet 6 inches (Building B), when measured to the top of the parapet. Building heights are proposed in excess of applicable maximums (50' and 65' with height averaging) for the purpose of accommodating the historic resources. The additional height would allow the Project to reestablish developable floor area, from one area of the site to another, while preserving the existing historic resources.

A VHR only applies if the property has a historic designation or is required, as a condition of approval of the Variance, to submit an application for historic designation prior to completion of the proposed project or establishment of the proposed use. Within the Project site three previously recorded historic resources were identified: 1) Market Basket Warehouse (501 S. Arroyo Parkway); 2) Lewis Iron Building (523 S. Arroyo Parkway); and 3) Pacific Electric Railroad (465 S. Arroyo Parkway).

All three buildings would be retained as part of the Project. The buildings at 501 and 523 South Arroyo Parkway were previously recommended as eligible for the local register based on evaluations that occurred in 1989 and 2000. In 2010, the City Council upheld a 2009 decision by the Design Commission that found both buildings are eligible for designation as landmarks because they retain historic integrity and meet the California Register of Historical Resources (CRHR) Criterion C.

The building at 501 South Arroyo Parkway is a two-story Moderne style warehouse and office building that was constructed in 1940 and is identified as the Market Basket Warehouse Offices. It has been noted as “one of two or three best intact examples of 1940s Moderne design in the Arroyo Parkway Industrial Area” and “as an example of World War II era Modern vernacular commercial design.”

The building at 523 South Arroyo Parkway, is a single-story brick masonry commercial building that was constructed in 1922 and is identified as the former Lewis Iron Building. It is noted as “an example of commercial design by the prominent local architecture firm of Marston and Van Pelt.”

Through preparation of a Historical Resources Assessment for the Project, no changes were observed that would compromise their historic integrity. The buildings remain eligible for the Local Register under CHRH Criterion C. The resources embody 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 value. Both buildings are also historical resources for the purposes of CEQA.

The former Pacific Electric Railroad Garage, which was also previously recommended eligible for the Local Register, and may continue to be eligible, is partially present. The building was integrated into the existing commercial building occupied by Whole Foods Market. Currently, the east and north facades of this building remain, while the remainder of the building was removed and replaced with new construction in 2007.

A review of the VHR shall be concurrent with the zoning map amendment and PD Plan. The recommendation and action taken by the Planning Commission and City Council shall be based upon the following findings in Zoning Code Section 17.61.080.H.3 (Variances – Variances for Historic Resources – Findings and decision):

1. *The Variance for Historic Resource is necessary to facilitate the appropriate use of an existing historic structure;*
2. *The Variance for Historic Resource would not adversely impact property within the neighborhood or historic district; and*
3. *Granting the Variance for Historic Resource application would be in conformance with the goals, policies, and objectives of the General Plan and the purpose and intent of any applicable specific plan.*

The Variance for Historic Resources to allow an increase in building height is intended to preserve and integrate the two historic resources into the Project. To facilitate their continued use for commercial purposes and to avoid compromising their historic integrity or distinctive characteristics, the design approach concentrated development intensity around, and behind, as opposed to above, in a manner that frames the historic buildings. Through this approach, the historic buildings maintain their lower scale and pedestrian centric appearance. An increase in allowed building height would not adversely impact historical resources in the vicinity of the Project site that include historic and landmark districts. Historic resources located outside of the Project site would not be physically altered, would retain all character-defining features and historic materials, and would retain their existing relationship within their respective settings. As a result, the additional building height would not adversely impact property within the neighborhood or historic district.

## **GENERAL PLAN AND SPECIFIC PLAN**

### General Plan Consistency

#### *General Plan Land Use Designation*

The General Plan Land Use Diagram depicts the distribution of various uses and intensity of development that shall be permitted as the physical representation of the element's goals and policies. These are implemented through the Zoning Code, Zoning Map, and Specific Plan. Standards for the density and intensity of development are defined for each land use category depicted on the Land Use Diagram. The Project site is designated High Mixed Use (0.0–3.0 FAR, 0-87 du/ac) on the General Plan Land Use Diagram, which is intended to support the development of multi-story mixed use buildings with a variety of compatible commercial (retail and office) and residential uses.

The Project proposes development of multi-story buildings that would include a mix of uses, shared open spaces, landscaping, shared driveways and subterranean parking. As noted, the PD

Plan that would regulate implementation of the Project, specifies a maximum FAR up to 2.89 and 87 du/acre, consistent with the High Mixed Use designation. A PD zoning district is consistent with all land use classifications of the General Plan. The proposed Amendment and VHR that would facilitate the Project is in conformance with the goals, policies and objectives of the General Plan as described in Attachment A, Findings.

#### Central District Specific Plan Consistency

The Project site is located in the Central District Specific Plan area. The CDSP includes planning concepts and strategies, principles, and criteria, as well as guidelines and approaches. Together, they fulfill planning objectives of the CDSP that respond to Guiding Principles in the General Plan Land Use Element. The proposed Project is consistent with the CDSP as demonstrated below.

The Arroyo Corridor/Fair Oaks subdistrict is an important gateway to Downtown Pasadena that also supports a broad, but rather undefined, mixture of uses at the periphery of the urban core. The objective of this subdistrict is to establish Arroyo Parkway as a visually appealing entrance corridor. The Project site is further distinguished within the subdistrict as the Arroyo Corridor Transition. This section of Arroyo Parkway should begin the transition toward a more pedestrian- and transit-oriented, mixed-use character, including residential, commercial, and employment. Among the preferred uses for this area are employment generators, including those with strong links to education, technology, research, and the arts. Key intersections along the corridor, namely California - Arroyo and near Del Mar - Arroyo should be redeveloped with a denser, street-oriented and mixed-use character. It is at these locations that housing is most suitably introduced into the subdistrict. The Project continues the theme of an active Central District by locating dense development close to Metro stations, and in particular the highest of intensities near the Del Mar and Fillmore stations where it is desired. The Project will improve underused parcels and strengthen a significant corridor by locating intensity towards a major intersection and stepping back intensity between major intersections. The Project will help the area establish a more consistent and identifiable character as a visually appealing entrance corridor through its pedestrian- and transit-oriented character, mix of uses, and integration of residential opportunities. The unified design would provide a more accommodating experience for pedestrians as they transition from the public realm to the private realm and vice versa. The Project along with the existing nearby Del Mar Station project will collectively contribute to the sense of place. The Project is designed to respect examples of modern commercial design, and commercial design by a prominent local architecture firm through the preservation and reuse of two historic structures.

The Project contributes to pedestrian vitality and promotes pedestrian activity by placing entries on the street, incorporating transparent facades, open space and opportunities for dining areas, while locating parking underground. Multi-modal movement is improved and enhanced through the reduction in existing curb cuts that contribute to disruptions in circulation. The Project is required to accommodate Dial-A-Ride and other accessible shuttles, prepare a Transportation Demand Management Program (TDM) Plan, and develop and implement a targeted Complete Streets Plan. The intent of the Complete Streets Plan is to encourage use of non-vehicular modes by the project's patrons and residents, and implement measures to discourage use of residential streets to and from the project site. Bicycle parking facilities are also required of the Project. The provision of these resources, Plans, and public improvements would provide an improved connection between the site and nearby Metro rail stations.



## **TREE PROTECTION ORDINANCE**

Certified Arborist Cy Carlberg prepared a tree inventory for the project that identifies 40 trees. Of these, 23 are located on the subject property, and 17 are street trees. None of the trees on private property are protected, and therefore, are not subject to the City's Tree Protection Ordinance and do not require a private tree removal permit for removal. The applicant plans to remove all of the unprotected trees and replace with 38 new trees across the Project site. The applicant anticipates removal of two protected street trees. As included in the conditions of approval in Attachment B, street trees are subject to tree protection and any request for removal shall be subject to review by the Urban Forestry Advisory Committee.

## **ENVIRONMENTAL REVIEW**

An Environmental Impact Report (EIR) was prepared to identify, analyze, and mitigate, to the extent feasible, the potential environmental effects associated with implementation of the Project. The EIR was prepared pursuant to the requirements of the California Environmental Quality Act (CEQA) and the Guidelines for the Implementation of CEQA (State CEQA Guidelines) (Title 14, *California Code of Regulations*, Chapter 3, Sections 15000 et. seq.). The Final EIR included as Attachment E constitutes the second and final part of the EIR for the Project and is intended to be a companion to the Draft EIR. The Draft EIR and technical appendices for the Project constitutes the first part of the EIR. The Final EIR includes responses to comments on the Draft EIR, revisions and clarifications to the Draft EIR, and a Mitigation Monitoring and Reporting Program (MMRP). The MMRP describes the mitigation program to be implemented by the City for the Project. Certification of the Final EIR by the City Council would require adoption of environmental findings. A draft Findings of Fact is provided for Planning Commission consideration as Attachment F.

Throughout the CEQA documentation, the two development scenarios are referred to as:

- Project (development of Building A with medical office/commercial), and
- Project with Building A Residential/Commercial (development of Building A with residential/commercial).

The following discussion summarizes the public review process that has occurred, and the environmental analysis.

### **Public Review Process**

On August 3, 2021, the City distributed an Initial Study (IS) and Notice of Preparation (NOP) to agencies, organizations, and individuals for a 30-day public review period (August 5, 2021 through September 3, 2021) to solicit comments and inform agencies and the public of the Project and the upcoming preparation of an EIR.

On August 11, 2021 (at a Planning Commission meeting) and August 26, 2021 (community meeting), the City held virtual scoping meetings to describe the Project, answer questions, and seek public input regarding the scope of the EIR analysis. During the scoping period, comments were received from agencies, organizations, and individuals. Written comments received were included in the Draft EIR, and environmental issues raised were considered in the preparation of the Draft EIR.

On January 18, 2022, the City made available the Draft EIR for a 45-day public review period (ended on March 3, 2022) and provided the public a Notice of Availability (NOA) of the Draft EIR.

On February 23, 2022, the Planning Commission held a virtual study session to inform the public about the Project and to solicit comments on the Draft EIR. The City received comment letters on the Draft EIR. All of the comment letters received by the City have been included and responded to in the Final EIR. Comments contained in the letters that raise significant environmental issues are addressed in Section 2.0 of the Final EIR. The Final EIR also includes minor revisions and clarifications to the Draft EIR, which are addressed in Section 3.0.

On May 25, 2022, the City made available the Final EIR. An errata to the Final EIR was subsequently made available that addressed minor text revisions. None of the revisions contained in the errata constitutes significant new information or changes to the analysis or conclusions of the EIR. The Draft EIR, Final EIR, and errata are all available on the City website.

### **Environmental Topics Analyzed**

Pursuant to the State CEQA Guidelines, a Draft EIR is required to identify any potentially significant adverse impacts and recommend mitigation measures that would eliminate or reduce these impacts to levels of less than significant. As part of the IS, the City determined there would be no impacts or less than significant impacts to the following environmental topics and/or thresholds:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Geology and Soils
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Wildfire

Based on the results of the IS and comments received in response to the NOP, the City determined implementation of the proposed Project and/or Project with Building A Residential/Commercial had the potential to impact the following environmental topics, which were further addressed in the Draft EIR:

- Air Quality
- Cultural and Paleontological Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Public Services and Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service System

The Draft EIR identified potentially significant environmental impacts related to the following topics: Cultural Resources, Noise, and Tribal Cultural Resources. As summarized below, through the incorporation of mitigation measures, the identified significant impacts would be reduced to a less than significant level. The complete analysis of all environmental topics can be found in the Draft EIR.

### Cultural Resources (Mitigation Required)

Section 3.2 of the Draft EIR addresses potential impacts to cultural and paleontological resources that could result from the implementation of the Project or Project with Building A Residential/Commercial. Information for this environmental topic in the Draft EIR was derived from a Historical Resource Assessment Report prepared for the Project site, an archaeological records search, a Sacred Lands File search, Native American consultation, and a paleontological resource record search.

Based on the Historical Resource Assessment prepared for the Project site, the buildings at 501 and 523 South Arroyo Parkway are historical resources for the purposes of CEQA. As proposed, the Project would not involve the physical destruction of the two buildings, nor would it result in any significant internal or external physical modifications that would compromise the historic integrity of the buildings. While the Project would not result in a substantive adverse change to the historic integrity of the buildings, the potential for future internal and external modifications to them does exist in the form of tenant improvements. Therefore, mitigation measure (MM) CUL-1 requires that the Project Applicant engage with a licensed architect and/or engineer that meets the Secretary of Interior's (SOI) Professional Qualifications Standards to develop a series of protection interventions and protocols that would preserve the two historical resources – 501 and 523 South Arroyo Parkway – on the Project site during construction activities. These protocols shall take into consideration the protection of and security of both resources, particularly the preservation of the character-defining features through the installation of physical protective barriers around each resource and the creation of site protocols that will eliminate the potential for physical damage resulting from impacts associated with construction and transport of equipment.

The potential for vibration to cause damage to the buildings at 501 and 523 South Arroyo Parkway is addressed under Noise, Section 3.7 of the Draft EIR. However, implementation of MM NOI-1, which outlines setbacks for operation of vibration-causing construction equipment, would reduce the potential for cosmetic damage to these two buildings to a less than significant level. With implementation of MMs CUL-1 and NOI-1, there would be a less than significant impact to historical resources. There are no known archaeological or paleontological resources on the Project site. However, based on the results on the cultural resources records searches conducted for the Project site and vicinity, unknown archaeological resources have potential to be present in native sediments beneath the Project site. Therefore, MM CUL-2, which identifies steps if cultural resources are discovered during construction, would be required. With implementation of MM CUL-2, the Project would result in less than significant impacts related to archaeological resources. The Project site is not located in the portions of the City considered to be paleontologically sensitive. Therefore, there would be less than significant impacts related to paleontological resources.

With implementation of MMs CUL- 1, CUL-2, and NOI-1, the Project and Project with Building A Residential/Commercial would result in less than significant impacts related to historic and archaeological resources.

### Noise (Mitigation Required)

Section 3.7 of the Draft EIR analyzes potential noise and vibration impacts associated with the implementation of the proposed Project and Project with Building A Residential/Commercial. Information for this environmental topic in the Draft EIR is derived from the noise analysis

conducted by Psomas and the City of Pasadena General Plan and its Environmental Impact Report (EIR). Construction of the project would occur up to the property lines. These construction activities would generate vibration. However, construction related vibration would not be expected to interfere with the operation of land uses proximate to the construction area. Land uses nearby (about 50 feet) include restaurants, moving and storage facilities, a supermarket, and other non-vibration sensitive uses. Construction generated vibration from the Project would not interfere with their operation. However, heavy construction vehicles and activities may have the potential for cosmetic building damage of remaining on-site structures within the Project site (i.e., Whole Foods Market and 501 and 523 South Arroyo Parkway).

Therefore, to reduce the potential for vibration-induced cosmetic damage to the structures at 465, 501, and 523 South Arroyo Parkway, MM NOI-1 specifies implementation of the following three steps: (1) setbacks, (2) monitoring, and (3) restoration (if applicable). These steps outline setbacks distances for specific types of equipment, responsibilities for vibration monitoring, and responsibilities for restoration of cosmetic damage (if applicable).

With implementation of MM NOI-1, there would be less than significant noise and vibration impacts related to construction and operation of the Project and Project with Building A Residential/Commercial.

#### Tribal Cultural Resources (Mitigation Required)

Section 3.10 of the Draft EIR analyzes potential impacts to tribal cultural resources that could result from implementation of the Project or Project with Building A Residential/Commercial. Information in this section is derived from consultation between the City and local tribal representatives (Gabrieliño Tongva Tribe and Gabrieliño Band of Mission Indians – Kizh Nation) consistent with Assembly Bill (AB) 52, an archaeological records search, the Sacred Lands File search, Native American consultation/cultural resources records search.

Based on consultation pursuant to AB 52 and the results of a records search, there are no tribal cultural resources listed on the California Register of Historical Resources (CRHR) or a local register within the Project site or otherwise known to the culturally affiliated Native American tribes. However, there is always the possibility that undiscovered intact cultural resources, including tribal cultural resources, may be present below the surface in native sediments. Therefore, MM TCR-1 requires the Project Applicant to accommodate a Native American Monitor culturally affiliated with the site as recognized by the Native American Heritage Commission (NAHC) prior to the commencement of any ground-disturbing activity on the site. MM TCR-1 also defines the role of the Tribal Monitor, if such an individual elects to be present during construction of the Project, and the steps required if a potential tribal cultural resource is encountered during ground-disturbing activities.

With implementation of MM TCR-1, there would be less than significant impacts related to Tribal Cultural Resources under the Project and Project with Building A Residential/Commercial.

#### **Final EIR**

The City responded to comments received on the Draft EIR in the Final EIR. This includes a copy of each comment letter and the City's responses to each applicable comment. In the process of responding to the comments, there were minor revisions to the text of the Draft EIR that are

identified in the Final EIR. None of the comments or responses constitute significant new information.

The State CEQA Guidelines require a public agency to adopt a Mitigation Monitoring and Reporting Program (MMRP) for ensuring the implementation of required mitigation measures to reduce or avoid significant environmental effects as identified in the EIR. Mitigation Measures (MM) identified in the MMRP specify the timing of the measure, the agency or party responsible for implementing the measure, and the agency or party with the primary responsibility for monitoring and enforcing compliance. The MMRP is included as part of the Final EIR attached to this report.

## **REVIEW BY OTHER DEPARTMENTS**

Several City Departments had the opportunity to review and comment on the proposed Project. This included the Design and Historic Preservation Section, Community Planning Section, Building and Safety, Cultural Affairs Division, Department of Transportation (DOT), Fire Department, Department of Public Works, Public Health Department, Housing and Career Services Department, and Department of Water and Power. Preparation of the EIR also solicited information and input from the Police Department, Library and Information Services Department, and the Parks, Recreation and Community Services Department. Recommended conditions of approval have been included in Attachment B to this report.

## CONCLUSION

Staff is recommending approval with Findings in Attachment A and Conditions of Approval in Attachment B. The Proposed PD includes a PD Plan that prescribes land use and development regulations. The proposal is consistent with the Central District Specific Plan and does not exceed maximums for FAR or density on the General Plan Land Use Diagram. The Variance for Historic Resources procedure is in place to provide relief from development standards in conjunction with preservation and reuse of historic resources. The adaptive reuse of historic structure and request for relief from maximum building heights to accommodate those structures fulfills this intent and purpose.

Respectfully Submitted,




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### Attachments:

- Attachment A: Specific Findings
- Attachment B: Conditions of Approval
- Attachment C: Preliminary Consultation Comments
- Attachment D: Draft PD Plan
- Attachment E: Final EIR and Errata
- Attachment F: Draft Findings of Fact
- Attachment G: Response to Comments Received After End of Draft EIR Public Review Period
- Attachment H: Project Plans

**ATTACHMENT A**  
**FINDINGS FOR ZONING MAP AMENDEMENT, ADOPTION OF A PD DISTRICT AND PD**  
**PLAN, VARIANCE FOR HISTORIC RESOURCES**

Zoning Map Amendment to reclassify the Project site from CD-6 to PD-39, adoption of a PD zoning district and accompanying PD Plan

1. *The proposed amendment is in conformance with the goals, policies, and objectives of the General Plan.*

The Project site is designated High Mixed Use (0.0-3.0 FAR, 0-87 du/ac) on the General Plan Land Use Diagram, which is intended to support the development of multi-story mixed-use buildings with a variety of compatible commercial (retail and office) and residential uses. Development is characterized by shared open spaces, landscaping, and small to minimal separations between buildings, and shared driveways and parking. Sites may be exclusively commercial, but not exclusively residential. Mixed-use development projects containing housing shall incorporate amenities contributing to a quality living environment for residents including courtyards, recreation facilities, and similar elements. Where buildings face the street frontage, they shall be designed to enhance pedestrian activity with transparent facades for retail uses and distinctive entries for housing. Parking shall be located below or to the rear of the street. Projects constructed at High Mixed Use densities may be required to develop pedestrian-oriented streetscape amenities along their primary street frontages, consistent with the improvement concepts and plans defined by the City.

The Project is in conformance with the High Mixed Use designation because development consists of multi-story buildings that will include a mix of uses (medical office, assisted and independent living, ground floor commercial, multifamily housing), shared open spaces, landscaping, shared driveways and subterranean parking. The accompanying PD Plan that will regulate implementation of the Project, specifies a maximum FAR up to 2.89 and 87 du/acre, consistent with the intensity and density of development prescribed by the General Plan Land Use Element. The PD zoning district is consistent with all land use classifications of the General Plan.

The proposed amendment that will facilitate the Project is in conformance with the goals, policies and objectives of the General Plan as described herein.

*Guiding Principle 1. Growth will be targeted to serve community needs and enhance the quality of life. Higher density development will be directed away from residential neighborhoods and into the Central District, Transit Villages, and Neighborhood Villages. These areas will have a diverse housing stock, job opportunities, exciting districts with commercial and recreational uses, and transit opportunities. New development will build upon Pasadena's tradition of strong sense of place, great neighborhoods, gardens, plazas, parks, and trees.*

The proposed amendment will facilitate high density development consisting of medical office, assisted living and independent living (senior housing), ground floor commercial uses, and/or housing. These uses are acutely needed when considering an aging population, are employment generating, and will leverage existing transit opportunities. The resulting Project will serve community needs and enhance quality of life, not limited to seniors, for residents of Pasadena and beyond.

*Guiding Principle 2. Pasadena's historic resources will be preserved. Citywide, new development will be in harmony with and enhance Pasadena's unique character and sense of place. New construction that could affect the integrity of historic resources will be compatible with, and differentiated from, the existing resource.*

Historic resources within the Project site will be preserved and integrated into the Project. Historic resources located outside of the Project site will not be physically altered, will retain all character-defining features and historic materials, and will retain their existing relationship within their respective settings. Implementation of a Mitigation, Monitoring and Reporting Program will ensure new construction does not affect the integrity of historic resources.

*Guiding Principle 3. Pasadena will be an economically vital City by providing jobs, services, revenues, and opportunities. A diverse economic base with jobs for Pasadena residents will be fostered; existing businesses will be encouraged to stay or expand; affordable housing will be provided for the labor pool; the continued fiscal health of the city will be ensured.*

Construction of the Project and Project uses will be employment- and revenue generating. Medical office uses, assisted and independent living uses, and ground floor commercial uses will provide services to the community. These uses will complement existing uses in the vicinity and in the case of residential dwelling units in Building A, will expand the economic base and encourage existing business to stay and expand. As such, the Project provides opportunities for both potential employees and existing and future residents of the City.

*Guiding Principle 4. Pasadena will be a socially, economically, and environmentally sustainable community. Safe, well designed, accessible and human-scale residential and commercial areas will be provided where people of all ages can live, work and play. These areas will include neighborhood parks, urban open spaces and the equitable distribution of public and private recreational facilities; new public spaces will be acquired. Human services will be coordinated and made accessible to those who need them.*

Providing adequate care and housing is a critical component of being a socially sustainable community. The higher density of land uses on the Project site compared to the existing condition is both economically and environmentally sustainable, particularly due to the site's proximity to bus and light rail transit facilities. The urban public spaces proposed as part of the Project invite gathering on the site in an aesthetically pleasing and safe environment whereas the existing site conditions are disjointed and do not provide open spaces for gathering not associated with a restaurant. The proposed building facades incorporate numerous window openings to provide views and to avoid blank, massive-looking building faces. The facades will also be articulated with patios, window shades, and varying surface treatments to provide variation and break up the surface of the buildings. The Project will incorporate varying building setbacks and recesses to allow for building articulation, and to create space for streetside plazas, patios, and building entrances. Portions of both proposed buildings will be set back from the widest part of the building envelope and some portions of the buildings will extend only to Level 4 and Level 6. Additionally, the ground floor will be slightly taller than the remaining levels, at 15 feet high. This will act to differentiate the ground floor and, combined with some unique architectural features for this level, create a human-scale and pedestrian-friendly environment.

Construction and operation of the Project will not result in wasteful, inefficient, or unnecessary construction of energy resources, nor conflict with or obstruct the applicable State or local



plans for renewable energy and energy efficiency. The EIR concluded that the Project will be consistent with State, regional, and City plans, policies, and regulations adopted for the purpose of reducing the emissions of GHGs.

*Guiding Principle 5. Pasadena will be a City where people can circulate without cars. Specific plans in targeted development areas will emphasize a mix of uses, pedestrian activity, and transit; public and private transit will be made more available; neighborhood villages and transit villages will reduce the need for auto use.*

The Project proposes high density development in an area that is intended for the type of intensities and densities proposed. While the development provides new subterranean parking, it includes a mix of uses that complement existing uses along Arroyo Parkway. The development supports the guiding principle because the additional opportunities and services provided by the Project will build upon the City as a destination, further encouraging pedestrian and transit activity. Two light rail stations are within one-quarter mile and the site is served by bus lines. Employees, customers, and residents of the site can shop for groceries, attend medical and other service related appointments, dine, and shop without a car. The mix of uses proposed and the existing ability to access other restaurant, dining, entertainment destinations proximate the site without a car support this guiding principle.

*Guiding Principle 6. Pasadena will be a cultural, scientific, corporate, entertainment, and educational center for the region. Long-term growth opportunities will be provided for existing institutions; a healthy economy will be fostered to attract new cultural, scientific, corporate, entertainment and educational institutions.*

Proposed medical office uses, assisted living and independent living uses support the objective of this area of the City being a corporate center for the region. These uses have the potential to support scientific research and will support the growing health/medical cluster immediately to the west along Raymond Avenue and South Fair Oaks Avenue. Project uses including housing will contribute to the economic base and provide long term growth for existing and new institutions. Project uses, transit accessibility, and proximity to other dining and shopping will encourage a healthy economy and foster other institutions.

*Guiding Principle 7. Community participation will be a permanent part of achieving a greater City. Citizens will be provided with timely and understandable information on planning issues and projects; citizens will directly participate in shaping plans and policies for Pasadena's future.*

The City has provided the public with timely and understandable information on the Project and multiple opportunities for citizens to directly participate. The City's environmental review process for the Project has met the requirements in CEQA for scoping and noticing. The City held two scoping meetings, including one with the Planning Commission. The City held a study session with the Planning Commission to receive input on the Draft EIR. These informational meetings allowed for direct citizen participation. As per City standards, the public hearings for the Project will be open to the public, and allow for direct citizen participation.

*GOAL 1. Sustainable Growth. Sustainable growth and change in orderly and well-planned developments within targeted areas that allow for higher density development in an urban core setting and in close proximity to transit that provides for the needs of existing and future*

*residents and businesses, ensures the effective provision of public services, and makes efficient use of land, energy, and infrastructure.*

The Project is located within an area of the City that is targeted for higher density development (Central District). The setting is part of the urban core of the City and the Project site is proximate to light rail and bus lines (or routes). The intensity and density of development proposed is consistent with the High Mixed Use Land Use designation. New construction will infill underutilized property predominantly occupied by one or two-story buildings and surface parking, with a dense, mixed development, making more efficient use of land, energy, and infrastructure. Therefore the Project's conformance with Policies 1.1 (Basic Growth Policy), 1.2 (Targeted Growth) and 1.3 (Development Capacities) carries-out Goal 1.

*GOAL 2. Land Use Diversity.* *A mix of land uses meeting the diverse needs of Pasadena's residents and businesses, fostering improved housing conditions, offering a variety of employment and recreational opportunities, and supporting a healthy population while protecting the environment.*

The Project provides a mix of uses that will meet the needs of residents and businesses. Independent living for seniors and multi-family residential units will contribute in addressing the community's fair share of housing needs and enable residents to live close to businesses and employment. Opportunities for medical office uses, assisted living, and other commercial uses will serve both local and regional needs, capturing a greater share of local spending and offering a diversity of employment opportunities. Further, these uses will capture the economic value induced by the presence of transit stations and accommodate needed health facilities that are transit and pedestrian accessible. Therefore the Project's conformance with Policies 2.1 (Housing Choice), 2.2 (Senior Housing), 2.3 (Commercial Businesses), 2.5 (Mixed Use), 2.6 (Transit-Related Land Uses), and 2.11 (Health Facilities) carries-out Goal 2.

*GOAL 3. Compatible Land Uses.* *A mix and distribution of land uses characterized by their compatibility.*

The mix of uses proposed will complement existing uses in the area and expands the distribution of land uses in the area. The Project will address a range of needs, from fully assisted living or memory care to fully independent living. Development of the Project will permit the City's senior population to be more integrated into the area, close to transit, grocery stores and other retail opportunities, service providers, and medical care. Therefore the Project's conformance with Policy 3.2 (Care Facilities) carries-out Goal 3.

*GOAL 4. Elements Contributing to Urban Form.* *A safe, well-designed, accessible City with a diversity of uses and forms. These diverse forms include distinct, walkable districts, corridors, and transit and neighborhood villages and cohesive, unique single and multi-family residential neighborhoods and open spaces where people of all ages can live, work shop and recreate.*

The proposed Project will maintain and enhance the City's urban form by offering additional choices that will serve community values, need, and varying demographics. The transition from low density development to a high density development continues the theme of an active Central District and continues to reinforce the area as a vital, pedestrian-oriented place that is focal to community identity, business activity, employment, and living. Locating dense development close to Metro stations, and in particular the highest of intensities near the Del Mar and Fillmore stations is a desired policy in the Land Use Element. The Project will improve

underused parcels and strengthen a significant corridor by locating intensity towards a major intersection and stepping back intensity between major intersections. Therefore the Project's conformance with Policies 4.2 (A Diversity of Places), 4.3 (An Active Central District), 4.4 (Transit Villages), 4.5 (Transit Villages in Context), 4.7 (Strengthen Major Corridors), 4.13 (Planned Developments) carries-out Goal 4.

*GOAL 5. Pedestrian-Oriented Places. Development that contributes to pedestrian vitality and facilitates bicycle use in the Central District, Transit Villages, Neighborhood Villages, and community corridors.*

The Project contributes to pedestrian vitality and promotes pedestrian activity by placing entries on the street, incorporating transparent facades, open space and opportunities for dining areas, while locating parking underground. The Project will provide bicycle parking and reduce the number of existing driveways, allowing for less disruption to pedestrian and bicyclists. Therefore the Project's conformance with Policy 5.2 (Pedestrian-Oriented Development), carries-out Goal 5.

*GOAL 6. Character and Scale of Pasadena. A built environment that evolves while maintaining Pasadena's unique sense of place, character, and the urban fabric.*

The Project will help the area establish a more consistent and identifiable character as a visually appealing entrance corridor through its pedestrian- and transit-oriented character, mix of uses, and integration of residential opportunities. The Project along with the existing nearby Del Mar Station project will collectively contribute to the sense of place. The Project is designed to respect examples of modern commercial design, and commercial design by a prominent local architecture firm through the preservation and reuse of two historic structures. Incorporation of these unique elements as well as adding street-fronting uses ("eyes on the street"), adequate lighting, will cultivate a sense of community ownership. Therefore the Project's conformance with Policies 6.1 (Sense of Place and History), 6.7 (Public Safety and Community Design) carries-out Goal 6.

*GOAL 8. Historic Preservation. Preservation and enhancement of Pasadena's cultural and historic buildings, landscapes, streets and districts as valued assets and important representations of its past and a source of community identity, and social, ecological, and economic vitality.*

The Project will retain historic structures on the site and reuse for commercial purposes. Available City processes such as a Variance for Historic Resource that are intended to accommodate historic resources undergoing development or change in use, incentive preservation. City support and assistance in pursuing designation of resources, and an equitable process based on adopted evaluation criteria will also contribute to preserving the historic assets. Therefore the Project's conformance with Policies 8.1 (Identify and Protect Historic Resources), 8.2 (Historic Designation Support), 8.3 (Preservation Efforts), 8.4 (Adaptive Reuse) carries-out Goal 8.

*GOAL 10: City Sustained and Renewed. Development and infrastructure practices that sustain natural environmental resources for the use of future generations and, at the same time, contribute to the reduction of greenhouse gas emissions and impacts on climate change.*

The Project will be consistent with the City's Climate Action Plan (CAP), SCAG's 2020–2045 RTP/SCS Connect SoCal, the California Air Resources Board (CARB), California's Climate Change Scoping Plan (Scoping Plan), and Statewide GHG reduction goals for 2030 or 2050 identified in Executive Order (EO) S-3-05 and Senate Bill (SB) 32. As discussed in Section 3.3, Energy, of the EIR, construction and operation of the Project would not result in wasteful, inefficient, or unnecessary construction of energy resources, nor conflict with or obstruct the applicable State or local plans for renewable energy and energy efficiency. The Project will involve the most energy-efficient buildings required under the current Title 24 Energy Efficiency Standards and will promote energy efficient transportation options by developing within a High Quality Transit Area (HQT) and Transit Priority Area (TPA). The Project will incorporate electric vehicle parking and charging, and provide for recycling. Infrastructure will be designed, constructed, and maintained based on the most current standards and best practices that will reduce impacts to the natural environment. The Project will retain and reuse structures as a means of supporting environmental sustainability. The Project will include 38 new trees and be required to plant new street trees as a condition of approval. Project implementation will result in a net gain in the urban forest. Therefore the Project's conformance with Policies 10.1 (Environmental Quality and Conservation), 10.2 (Land Uses Supporting Sustainability), 10.4 (Sustainable Building Practices), 10.6 (Adaptive Reuse), 10.13 (Urban Forest), 10.16 (Infrastructure) carries-out Goal 10.

**GOAL 11: Job Opportunities.** Provide land use capacities that accommodate a diversity of job opportunities for Pasadena's residents.

Project uses will provide for, and accommodate diverse job opportunities. Medical office uses and assisted living use will provide employment opportunities in research and outpatient care, in conjunction with the expanding medical cluster around Huntington Hospital. Other ground floor commercial uses to be provided by the Project also represent job opportunities. The Project presents an opportunity to attract new establishments that are complimentary to the Central District area and transit village. Therefore the Project's conformance with Policy 11.1 (Business Expansion and Growth), 11.3 (New and Complementary Businesses) carries-out Goal 11.

**GOAL 12. Shopping and Dining.** Diversity of shopping opportunities enabling Pasadena's residents to acquire desired goods and services in the City, as well as attracting customers from surrounding communities.

The Project will provide employment generating uses and housing opportunities. It will also attract customers and visitors from within the community and surrounding communities because of the diversity of opportunities within and around the site. The revitalization of the Project site will support other businesses nearby because those working, residing, or visiting the site will pursue their services and goods due to proximity. In addition, the new development will attract businesses, and positively enhance the corridor. Therefore the Project's conformance with Policies 12.2 (Business Attraction), 12.4 (Revitalization of Commercial Areas) carries-out Goal 12.

**GOAL 15. Sound Local Economy.** A sound local economy which attracts investment, increases the tax base, creates employment for Pasadena residents and generates public revenues.

The Project will attract investment, increase the tax base, create employment, and generate revenues. The Project represents a significant investment in the local community. Therefore the Project's conformance with Policy 15.1 (Local Investment) carries-out Goal 15.

*GOAL 16. Superior Services. A superior level of services meeting the needs of Pasadena's diverse residents including schools, hospitals, parks, child and senior facilities and programs, libraries, shelters, public auditoriums, health facilities, social clubs and recreation centers*

The Project will provide assisted living and independent living for seniors, which are acutely needed in the City and wider region as the U.S. population is generally living longer and a greater proportion of the population is considered senior or elderly. Providing health related facilities and opportunities addresses and anticipates needs of the community. Further, locating these types of uses near transit and within proximity to other health related facilities such as Huntington Hospital improves the accessibility of these services. Therefore the Project's conformance with Policies 16.3 (Anticipated Needs), 16.6 (Accessible Services) carries-out Goal 16.

*GOAL 18. Land Use/Transportation Relationship. Pasadena will be a City where there are effective and convenient alternatives to using cars and the relationship of land use and transportation is acknowledged through transit-oriented development, multi-modal design features, and pedestrian and bicycle amenities in coordination with and accordance with the Mobility Element.*

The inclusion of medical offices, assisted and independent living, and/or residential units at the Project site brings a mix of uses that are not currently well represented along Arroyo Parkway. Patrons, employees, and residents of the development will benefit from access to nearby resources such as the Whole Foods Market on site and several restaurants and other amenities in the vicinity. This will be in addition to potential medical office appointments or visits to those being cared for. All will benefit from convenient access to two Metro stations within a ¼ mile of the site, and bus service. The mix and density of uses will induce a greater share of walking, bicycling, and transit use as an alternative to the automobile. In addition, in placing assisted living and independent living uses at this particular site, the Project has considered the mobility needs of the disabled, and especially seniors. Therefore the Project's conformance with Policies 18.1 (Development Mix and Densities), 18.2 (Mobility) carries-out Goal 18.

*GOAL 19. Parking Availability. The supply of parking will reflect Pasadena's objective to protect residential neighborhoods; create a vital, healthy, and sustainable economy; establish Pasadena as a leader in environmental stewardship; encourage physical activity and a commitment to health and wellness; and encourage walking, biking, and transit. The supply of parking in an area will also reflect the type, mix, and density of uses; the availability of shared facilities; and the proximity to transit.*

The Project removes all surface parking and replaces with subterranean parking, which reduces the land lost to parking. The location of the Project and mix of uses within and outside of the site provides an opportunity for residents, patrons, visitors, and employees to park once and visit many destinations. This will encourage a greater share of physical activity by encouraging walking, biking, and transit use to access other nearby destinations. Therefore the Project's conformance with Policies 19.3 (Parking Management), 19.4 (Park Once) carries-out Goal 19.

*GOAL 20. Information and Participation. All Pasadena communities will be uniformly aware and participate in land use planning, entitlement processes, and decision-making processes through the communication of clear and understandable information and engagement opportunities*

The review of the Project, including the environmental analysis, requires a public process and public involvement. Public notification through the use of new technology (ie. virtual meetings), mail, and the City's website have enabled the public to provide input in decision making. Printed materials have also been made available at various City sites. Additionally, there have been multiple opportunities for public involvement. The city held two informational scoping meetings during a 30-day public review period of the Initial Study to solicit comments and inform agencies and the public of the Project and the upcoming preparation of an Environmental Impact Report. The City held an information study session during a 45-day public period of the Draft Environmental Impact Report to solicit comments and inform the public of the Project. Publicly noticed meetings before the Planning Commission and City Council are additional opportunities that enable the public to provide input. Therefore, the Project's conformance with Policies 20.1 (Neighborhood Meetings), 20.2 (Brochures and Notices), 20.3 (Public Involvement and Proposed Projects), 20.5 (Public Discussion) carries-out Goal 20.

*GOAL 28. Places to Live, Work, Shop and Recreate. A diversity of well-designed corridors and villages containing an integrated mix of commercial uses and/or housing that enable Pasadena's residents to live close to businesses, services and employment.*

The Project enables residents to live close to services, shopping, or work. The development of the property with a mix of uses that serve community needs, particularly in the Central District area and in proximity to Metro stations expands opportunities to reduce automobile use and actively engage and enhance pedestrian and transit activity. Therefore, the Project's conformance with Policy 28.1 (Land Use Mix) carries out Goal 28.

*GOAL 29. Transit Villages. Moderate to high density mixed-use clusters of residential and commercial uses developed in an integrated 'village-like' environment with buildings clustered on common plazas and open spaces in proximity to Metro Gold Line stations capitalizing on their induced market demands and land values, facilitating ridership, and reducing automobile use while increasing walkability*

The Project accommodates a mix of uses that are acutely needed and not well represented along Arroyo Parkway. The clustering of medical office uses and care uses in proximity to other health related facilities in proximity to Metro stations will facilitate ridership, increase walkability, and better aligns with the City's desire for transit villages. Therefore, the Project's conformance with Policies 29.1 (Mix of Uses) carries-out Goal 29.

*GOAL 31. Central District. The primary civic, business, financial, retail, entertainment, and cultural center of Pasadena with supporting housing enabling residents to live close and walk to these uses and access regional transit.*

The Project is a high density development in proximity to Metro stations with opportunities for medical office, assisted and independent living, restaurant, and/or housing. This growth is targeted to an area where growth and intensity of development is emphasized. The development will expand the customer base for business, both new and existing, and support

Metro ridership. It will strengthen the Central District's economic vitality and expand economic opportunities. Therefore the Project's conformance with Policies 31.1 (Focus Growth), 31.3 (Del Mar, Memorial Park and Lake Transit Villages), 31.7 (Expanded Economic Opportunities) carries-out Goal 31.

2. *The proposed amendment would not be detrimental to the public interest, health, safety, convenience, or general welfare of the City.*

The proposed amendment will reclassify the Project site from CD-6 to PD-39 and facilitate the construction of the Affinity Project. The resulting Project will not be detrimental to public interest but instead will reinforce and strengthen Arroyo Parkway as a major corridor, provide jobs, services, revenues, and opportunities that will support Pasadena as an economically vital city and allow for continued fiscal health. The Project will improve Pasadena's infrastructure and urban form through modernized buildings that are energy- and water-efficient. The Project will provide assisted living and independent living facilities for seniors that are acutely needed in the City and wider region because the U.S. population is living longer and a greater proportion of the population is considered senior or elderly. Medical office uses are employment-generating and will be located proximate to health care related land uses in the vicinity providing efficient synergy. These types of uses are in the public interest because they serve community needs and enhance quality of life for residents of Pasadena and beyond, and are not limited to seniors. Further, providing adequate care and multi-family housing (where constructed in Building A) for the community is a critical component of being a socially sustainable community. The higher density of land uses on the Project site compared to the existing condition is both economically and environmentally sustainable, particularly due to the site's proximity to bus and light rail transit facilities. The Project will retain and reuse existing historic structures, which is in the public interest.

Implementation of the Project will not result in the need for new or expanded fire protection, police protection, library service, or parks and recreation facilities that could otherwise present a detriment to the health, safety, convenience or general welfare of the City. An Environmental Impact Report (EIR) was prepared to identify, analyze, and mitigate, to the extent feasible, the potential environmental effects associated with implementation of the Project facilitated by the amendment. The EIR considered several environmental topics and identified potentially significant environmental impacts related to the following topics: Cultural Resources, Noise, and Tribal Cultural Resources. However, through the incorporation of mitigation measures, identified significant impacts would be reduced to a less than significant level.

Implementation of the Project pursuant to the PD Plan, conditions of approval, and Mitigation Monitoring and Reporting Program will ensure approval of the amendment and adoption of the PD zoning district, and accompanying PD Plan will not be detrimental to the public interest, health, safety, convenience, or general welfare of the City.

Variance for Historic Resources to allow building heights up to 93'6" where the maximum allowed is 50' or 65' with height averaging

3. *The Variance for Historic Resource is necessary to facilitate the appropriate use of an existing historic structure.*

The buildings at 501 and 523 South Arroyo Parkway were previously recommended as eligible for the local register based on evaluations that occurred in 1989 and 2000. In 2010, the City Council upheld a 2009 decision by the Design Commission which found that both buildings are eligible for designation as landmarks because they retain historic integrity and meet the California Register of Historical Resources (CRHR) Criterion C. The building at 501 South Arroyo Parkway is a two-story Moderne style warehouse and office building that was constructed in 1940 and is identified as the Market Basket Warehouse Offices. It has been noted as "one of two or three best intact examples of 1940s Moderne design in the Arroyo Parkway Industrial Area" and "as an example of World War II era Modern vernacular commercial design." The building at 523 South Arroyo Parkway, is a single-story brick masonry commercial building that was constructed in 1922 and is identified as the former Lewis Iron Building. It is noted as "an example of commercial design by the prominent local architecture firm of Marston and Van Pelt." Through preparation of a Historical Resources Assessment for the Project, no changes were observed that would compromise their historic integrity. The buildings remain eligible for the Local Register under CHRH Criterion C. The resources embody 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 value. Both buildings are also historical resources for the purposes of CEQA.

The Variance for Historic Resources to allow an increase in building height is necessary to preserve and integrate the two historic resources into the Project. To facilitate their continued use for commercial purposes and to avoid compromising their historic integrity or distinctive characteristics, the design approach concentrated development intensity around, and behind, as opposed to above, in a manner that frames the historic buildings. Through this approach, the historic buildings maintain prominence and their lower scale, pedestrian centric appearance. Allowing the additional height reduces risk of resource loss, deterioration of integrity, or loss of prominence that may result if development intensity were located above or over the historic buildings.

4. *The Variance for Historic Resource would not adversely impact property within the neighborhood or historic district.*

Properties within the neighborhood would not experience any noticeable change as a direct result of allowing an increase in building height. An increase in allowed building height would not adversely impact historical resources in the vicinity of the Project site that include historic and landmark districts. Historic resources located outside of the Project site will not be physically altered, will retain all character-defining features and historic materials, and will retain their existing relationship within their respective settings. Further, the additional height would not prohibit or unreasonably restrict the use of solar energy systems on adjacent structures or create an adverse change in shade. Therefore, the additional building height granted through this Variance for Historic Resources would not adversely impact property within the neighborhood or historic district.



5. *Granting the Variance for Historic Resource application would be in conformance with the goals, policies, and objectives of the General Plan and the purpose and intent of any applicable specific plan.*

A Guiding Principle of the Land Use Element of the General Plan is that Pasadena's historic resources will be preserved. Goal 8 (Historic Preservation) of the General Plan seeks the preservation and enhancement of Pasadena's cultural and historic buildings as valued assets and important representations of its past. The adaptive reuse of the historic buildings will ensure the preservation of a surviving early example of a particular building design and work of a prominent local architectural firm. Policy 10.6 (Adaptive Reuse) of the General Plan encourages adaptive reuse of structures, including non-historic structures, as a means of supporting environmental sustainability. The project site includes eligible historic resources that will be adaptively re-used as part of the proposed Project. This approach respects the General Plan's goals of not only protecting historic resources, but restoring and enabling continued economic and environmental value of such resources. The proposed project will allow the existing resource to be appropriately modernized and reused to reduce the risk of deterioration that may otherwise occur. Finally, the design of the Project demonstrates architectural sensitivity to the historic buildings in its approach to height, massing, and modulation through the location of development intensity around, and behind, as opposed to above, in a manner that frames the historic buildings. Granting the Variance will allow the Project to satisfy a desire of the subdistrict, by raising the visual appeal of the site and corridor through dense development, and maintaining an attractive pedestrian- and transit-oriented character at the street.

## ATTACHMENT B CONDITIONS OF APPROVAL

The applicant or successor in interest shall comply with the following conditions of approval:

1. The Planned Development 39 (PD-39) PD Plan dated \_\_\_\_\_ shall apply and supersede any inconsistent or different standards established by Title 17 of the Pasadena Municipal Code (PMC) but only for the development plan referred to in Section \_\_ of Ordinance \_\_\_\_\_. Except as expressly provided in PD-39, PD-39 shall comply with all the requirements of Title 17 of the Pasadena Municipal Code and The Citywide Design Principles.
2. The site plan, floor plans, parking levels plans, elevations, and building sections submitted for building permits shall substantially conform to the site plan dated \_\_\_\_\_ submitted with this application, except as modified herein.
3. References herein to the applicant or developer shall mean the Project Applicant, and all references include not only the Project Applicant, but also any successors in interest.
4. All of the land use regulations and additional use regulations of CD-6 Central District Specific Plan, Arroyo Corridor/Fair Oaks subdistrict that are not inconsistent with this PD-39 shall apply. In cases of conflict, the PD-39 Ordinance shall prevail.
5. Compliance with these conditions and the intent of these conditions shall be to the satisfaction of the Planning Director, his or her designee, or, for conditions imposed by a specific City department, the department originally issuing the condition, and in accordance with any stated laws or regulations, or any amendments thereto. The implementing and enforcing departments may determine substantial conformance with these conditions of approval.
6. The final decision letter and conditions of approval shall be incorporated in the building plans submitted for building plan check.
7. The project shall adhere to the City regulations governing hours of construction, noise levels generated by construction and mechanical equipment, and the allowed level of ambient noise as specified in Chapter 9.36 of the PMC, unless otherwise stated in the conditions of approval, or as stated in the Mitigation Monitoring and Reporting Program.
8. Pursuant to Chapter 17.78 of the Zoning Code, the Zoning Administrator can call for a review of the approved conditions at a duly noticed public hearing before the Planning Commission if it can be reasonably shown that there are grounds for revocation or modification of this Planned Development. Any such Planning Commission review of these conditions may result in modifications or the addition of new conditions to address any issues related to the use. The Planning Commission may revoke the Planned Development if sufficient cause is shown.
9. The applicant or successor in interest shall comply with all mitigation measures contained within the approved Mitigation Monitoring and Reporting Program.
10. The proposed project, Activity Number **PLN2020-00127**, is subject to the City's Condition Monitoring Program and Mitigation Measures Monitoring Program. Condition Monitoring

and Mitigation Measures Monitoring are required for your project. Contact the Planning Division at (626) 744-4009 to schedule an inspection appointment.

### **Planning Division**

11. Prior to issuance of any building or grading permits, the applicant or successor in interest shall record a lot tie covenant and agreement for purposes of calculating the maximum allowable gross floor area and density for the entire property (parcels 5722-008-019, 5722-008-002, 5722-008-012, 5722-008-017, 5722-008-016). Each individual legal parcel shall be subject to the covenant whether or not such individual parcel is sold.
12. The applicant or successor in interest shall submit an application to designate 501 and 523 South Arroyo Parkway as Landmarks. Landmark Designation shall be required prior to issuance of any building or grading permits.
13. No grading permit shall be issued until the building permit for the project is ready to be issued.
14. All parking spaces reserved for residential uses in the subterranean parking garage shall be segregated from the parking for commercial uses. This may involve signage or the construction of fencing and/or vehicular gates to limit access, which shall be reviewed by the Department of Transportation and the Planning and Community Development Department.
15. An exterior lighting plan, including specifications of the proposed fixtures, shall be submitted to the Zoning Administrator prior to the issuance of any building permits. No light sources (e.g., bulb) shall be visible from any location off the site. The lighting shall comply with the standards of Section 17.40.080 (Outdoor Lighting) of the Zoning Code.
16. All exterior mechanical equipment shall be architecturally screened from view of the public right-of-way in a manner subject to review and approval by the Zoning Administrator and Design and Historic Preservation staff.
17. The project is subject to review and approval by the Design Commission through the Design Review process.
18. The applicant or the successor in interest, shall submit a final landscape and irrigation plan, in compliance with Zoning Code Chapter 17.44 (Landscaping) along with plans for a building permit. The plan shall be reviewed and approved to the satisfaction of the Zoning Administrator prior to the issuance of any building or grading permits. The landscape plan shall include a mix of plant size and materials. Plant materials shall emphasize drought-tolerant and/or native species.
19. This project meets the threshold for state-mandated water-efficient landscaping. Accordingly, the final landscape plans (inclusive of planting and hardscape plans, the planting pallet, drainage plan, and irrigation system plan(s) and specifications), shall be reviewed by Planning Department staff for conformance with the standards and requirements specified within the 2015 California Model Water Efficient Landscape Ordinance (MWELo) prior to the issuance of a building permit. No certificate of occupancy shall be issued until such plans have been deemed compliant with the MWELo and the

landscaping has been installed per such approved MWELO-compliant plans to the satisfaction of the department.

20. Construction hours, allowable workdays, and the phone number of the job superintendent should be clearly posted at all construction entrances to allow surrounding property owners/users to contact the job superintendent if necessary. In the event the City receives a complaint, appropriate corrective actions should be implemented, and a report of the action should be provided to the reporting party.
21. The project shall comply with the City Trees and Tree Protection Ordinance - Chapter 8.52 of the PMC. The ordinance provides for the protection of specific types of trees on private property as well as all trees on public property.
22. If construction is initiated during the breeding season for nesting birds (i.e., March 1–September 15) and nesting raptors (i.e., January 1–July 31), the Project Applicant shall perform, or direct the performance of, a pre-construction survey for nesting birds and/or raptors shall be conducted by a qualified Biologist within three days prior to any construction activities on the Project site and in the immediately surrounding area (i.e., perform survey within 300 ft for nesting birds and within 500 ft for nesting raptors). A qualified Biologist shall be knowledgeable and experienced in conducting nesting bird surveys within Southern California and in determining appropriate buffer size to prevent bird nesting failure. If the Biologist does not find any active nests in or immediately adjacent to the Project site, construction work shall be allowed to proceed and no further action is required
23. If the Biologist finds an active nest in or immediately adjacent to the Project site and determines that the nest may be impacted or breeding activities substantially disrupted due to planned construction activities, the Biologist shall delineate an appropriate buffer zone around the nest depending on the sensitivity of the species and the nature of the construction activity. Any nest found during survey efforts shall be mapped on the construction plans. The active nest shall be protected until nesting activity has ended. To protect any nest site, the following restrictions to construction activities shall be required until nests are no longer active, as determined by a qualified Biologist: (1) construction limits shall be established within a buffer around any occupied nest (the buffer shall be 25–100 ft for nesting birds and 300–500 ft for nesting raptors), unless otherwise determined by a qualified Biologist and (2) access and surveying shall be restricted within the buffer of any occupied nest, unless otherwise determined by a qualified Biologist. Encroachment into the buffer area around a known nest shall only be allowed if the Biologist determines that the proposed activity would not disturb the nest occupants. Construction in a buffer area can proceed when the qualified Biologist has determined that fledglings have left the nest or the nest has failed.
24. Unanticipated Discovery of Human Remains and Associated Funerary Objects: Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in PRC 5097.98, are also to be treated according to this statute. Health and Safety Code 7050.5 dictates that any discoveries of human skeletal material shall be immediately reported to the County Coroner and excavation halted until the coroner has determined the nature of the remains. If the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native

American, he or she shall contact, by telephone within 24 hours, the NAHC and PRC 5097.98 shall be followed.

25. Resource Assessment & Continuation of Work Protocol: Upon discovery of human remains, the tribal and/or archaeological monitor/consultant/consultant will immediately divert work at minimum of 100 feet and place an exclusion zone around the discovery location. The monitor/consultant(s) will then notify the Tribe, the qualified lead archaeologist, and the construction manager who will call the coroner. Work will continue to be diverted while the coroner determines whether the remains are human and subsequently Native American. The discovery is to be kept confidential and secure to prevent any further disturbance. If the finds are determined to be Native American, the coroner will notify the NAHC as mandated by state law who will then appoint a Most Likely Descendent (MLD).
26. Kizh-Gabrieleno Procedures for burials and funerary remains: If the Gabrieleno Band of Mission Indians – Kizh Nation is designated MLD, the Koo-nas-gna Burial Policy shall be implemented. To the Tribe, the term “human remains” encompasses more than human bones. In ancient as well as historic times, Tribal Traditions included, but were not limited to, the preparation of the soil for burial, the burial of funerary objects with the deceased, and the ceremonial burning of human remains. The prepared soil and cremation soils are to be treated in the same manner as bone fragments that remain intact. Associated funerary objects are objects that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later; other items made exclusively for burial purposes or to contain human remains can also be considered as associated funerary objects.
27. Treatment Measures: Prior to the continuation of ground disturbing activities, the landowner shall arrange a designated site location within the footprint of the project for the respectful reburial of the human remains and/or ceremonial objects. In the case where discovered human remains cannot be fully documented and recovered on the same day, the remains will be covered with muslin cloth and a steel plate that can be moved by heavy equipment placed over the excavation opening to protect the remains. If this type of steel plate is not available, a 24-hour guard should be posted outside of working hours. The Tribe will make every effort to recommend diverting the project and keeping the remains in situ and protected. If the project cannot be diverted, it may be determined that burials will be removed. The Tribe will work closely with the qualified archaeologist to ensure that the excavation is treated carefully, ethically and respectfully. If data recovery is approved by the Tribe, documentation shall be taken which includes at a minimum detailed descriptive notes and sketches. Additional types of documentation shall be approved by the Tribe for data recovery purposes. Cremations will either be removed in bulk or by means as necessary to ensure completely recovery of all material. If the discovery of human remains includes four or more burials, the location is considered a cemetery and a separate treatment plan shall be created. Once complete, a final report of all activities is to be submitted to the Tribe and the NAHC. The Tribe does NOT authorize any scientific study or the utilization of any invasive and/or destructive diagnostics on human remains.
28. Each occurrence of human remains and associated funerary objects will be stored using opaque cloth bags. All human remains, funerary objects, sacred objects and objects of cultural patrimony will be removed to a secure container on site if possible. These items should be retained and reburied within six months of recovery. The site of reburial/repatriation shall be on the project site but at a location agreed upon between the

Tribe and the landowner at a site to be protected in perpetuity. There shall be no publicity regarding any cultural materials recovered.

29. Professional Standards: Native American and Archaeological monitoring during construction projects will be consistent with current professional standards. All feasible care to avoid any unnecessary disturbance, physical modification, or separation of TCR's shall be taken. The Native American Monitor shall be culturally affiliated with the site as recognized by the Native American Heritage Commission (NAHC). Principal personnel for Archaeology must meet the Secretary of Interior standards for archaeology and have a minimum of 10 years of experience as a principal investigator working with Native American archaeological sites in southern California.

### **Cultural Affairs**

30. The project shall meet all requirements of the Public Art program. Prior to being issued a building permit, the property owner shall deposit twenty percent (20%) of the total one percent building valuation as the Public Art Deposit for the project. It is their responsibility to allocate the remaining eighty percent (80%) toward an onsite public art project, developed in accordance with the Guidelines for New Private Development. The property owner may also choose to pay the full 1% building valuation to the Cultural Trust Fund, in lieu of developing an onsite public art project. Fulfillment of the Public Art Requirement via an onsite public art project or payment of the 1% in lieu fee shall occur in order to receive Final Signoff/Certificate of Occupancy.

Please note: For those property owners who choose to pursue the onsite public art project option, the following is required:

- a. An art consultant shall manage any art project valued at \$25,000 or more. After consulting with Cultural Affairs Staff, an art consultant should be contracted as soon as possible so they may work as an integral part of the design team from the inception of the project.
- b. No project will receive Concept Design Review by the Design Commission without having first filed a Public Art Application with Cultural Affairs Staff.
- c. A draft Concept Art Plan shall be submitted to Cultural Affairs Staff within 45 days after Concept Design approval by the Design Commission.
- d. Application for Final Design Review by the Design Commission is only possible after the Concept Art Plan has been approved by the Arts & Culture Commission.

### **Building & Safety**

31. GOVERNING CODES: Comply with the Current Edition of California Building Code, California Electrical Code, California Plumbing Code, California Mechanical Code, California Energy Code, *California Green Building Standard Code* and the City of Pasadena Municipal Code. The governing edition is based on the date in which the project is submitted to the City of Pasadena for review.
32. BUILDING CODE ANALYSIS: Provide a Building Code Analysis on the title sheet. Include the code(s) information for each building proposed: Descriptive scope of work, occupancy, assessor's parcel number, number of stories, type of construction, fire sprinklers, floor area, height, and allowable floor area.

33. BEST MANAGEMENT PRACTICES: Photocopy to plans and complete the BEST MANAGEMENT PRACTICE page 1(form must be signed). Photocopy any other applicable pages and cross reference the location at the site plan, i.e. the material storage, the concrete waste management, etc. These forms can be found at <https://www.cityofpasadena.net/planning/building-and-safety/bs-applications-forms/#informational-handouts>
34. PROPERTY LINE SURVEY REQUIRED. Per City of Pasadena Policy property line survey is required for:
- a. New construction.
  - b. Auxiliary buildings and additions where setback is less than 5'-0" to property line.
  - c. All buildings where specific Zoning Division Variance is issued for approved setbacks & whether newly constructed or altered.
35. SOILS REPORT REQUIRED. A soils engineer report is required for:
- a. All new constructed single and multi-family residential, commercial, and industrial buildings.
  - b. An addition to a commercial or industrial building.
  - c. Second (2nd) story addition to existing one-story building.
  - d. Hillside construction, i.e. decks, retaining walls, and swimming pools.
36. GRADING:
- Show compliance with CBC 2019 Appendix J – Grading with City of Pasadena Amendments.
  - Clearly show the cubic yard quantities for excavation (cuts) and fills and label if site grading or foundation excavations.
  - Clearly show the cubic yard quantities for excavation (cuts) and fills; and label if site grading or foundation excavations. A grading permit may not be required per section J103.2 Exemptions.
37. GREEN CODE: Photocopy to plans and complete the 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE WITH CITY OF PASADENA AMENDMENTS FORMS. These forms are being provided attach and can be found at <https://www.cityofpasadena.net/planning/building-and-safety/bs-applications-forms/#informational-handouts>.
38. LOW IMPACT DEVELOPMENT (LID): Low Impact Development (LID) may be required for this project. Refer to the City of Pasadena link for further information on the requirements and submittal process: <https://www.cityofpasadena.net/wp-content/uploads/sites/30/Form-PC.pdf?v=1599178168233>.
39. MEANS OF EGRESS (EXITING): Clearly label and identify on plans fire-resistive corridors, exit enclosures, exit passageways, horizontal exits, occupancy separation walls and floors, fire resistive shafts, and fire walls, along with their fire-resistive ratings as applicable.
40. FIRE AND SMOKE PROTECTION FEATURES: Show materials, systems and assemblies used for structural fire resistance and fire-resistance-rated construction separation of adjacent spaces to safeguard against the spread of fire and smoke within a building and the spread of fire to or from buildings.

41. ACCESSIBILITY:

- Provide compliance with accessibility per CBC Chapter 11A and 11B accordingly.
- Provide an analysis for the minimum required units and parking spaces. Label the accessible units/parking spaces.
- Provide the minimum vertical clearance for VAN accessible to basement and garage per 11A and/or 11B accordingly.

42. REQUIRED PLANS AND PERMIT(S):

- In addition to architectural plans, provide Structural, Shoring, Plumbing, Mechanical, Electrical plans, and grading plans as required. No deferred submittal.
- Separate permits are required for the following: Mechanical, Electrical, Plumbing, Fire Sprinkler, Demolition, Block walls, others.

**Health Department**

43. Per California Health and Safety Code (CHSC) Section 113789(c)(9), facilities licensed by Department of Social Services (DSS) Community Care Licensing are exempt from the health permit requirement. If the proposed business is licensed by DSS Community Care Licensing, plan submittal to Environmental Health for the kitchen is not required, and a health permit for the kitchen is not required.

If the facility is unlicensed, or if the facility is licensed by the California Department of Public Health, the facility meets the CHSC definition of a food facility, and health plan approval and a health permit are required for the kitchen.

Examples

- Residential Care Facility for the Elderly (DSS Community Care Licensing): Exempt
- Skilled Nursing Facility (CDPH): Health plan review and health permit required

If the facility is licensed by both DSS Community Care Licensing and CDPH, health plan approval and a health permit are required for the kitchen that provides foodservice to the CDPH portion of the facility.

44. Food facilities shall adhere to the regulations established in the Tobacco Use Prevention Ordinance (PMC 8.78). Smoking in outdoor public areas is prohibited throughout the City of Pasadena. Refer to the following link for more information:  
8.78.071 – Prohibition of smoking in certain outdoor public places

45. If pools or spas are planned in this development, plan submittal to Environmental Health is likely to be required. Contact Pool Plan Check Specialist Elaine Zita at [ezita@cityofpasadena.net](mailto:ezita@cityofpasadena.net) or at (626) 744-6026 for details.

**Housing and Career Services Department**

46. Where subject to the City's Inclusionary Housing Requirements (Zoning Code, Chapter 17.42), the applicant or successor-in-interest shall obtain all necessary clearances from the Housing and Career Services Department, including the submission of an Inclusionary Housing Plan for approval by the City Manager prior to any applicable discretionary action by the City.



## **Fire Department**

47. Assisted Living: 24 hour care facilities in a group R2.1 occupancy licensed by a government agency shall comply with the requirements of CBC Section 435.1 through 435.8.2.
48. High- rise building: Occupancies having occupied floors more than 75 feet above the lowest level of Fire Department Vehicle Access shall comply with CBC section 403.2 through 403.6.2.
49. Secondary Water Supply: A secondary on site water supply shall be provided for high- rise building CFC Section 903.3.5.2.
50. Emergency system: The detection, alarm and emergency voice/alarm communication system for high-rise building shall comply with CBC Section 403.4.1 through 403.4.8.
51. Fire Command Center: A fire command center complying with section 911 of CFC shall be provided in a location approved by the fire department.
52. Smoke Control System: High-rise building shall be provided with a passive or active smoke control system or combination thereof in accordance with CFC Section 909.
53. Standby power: A standby power system shall be provided per requirement of CBC Section 403.4.8
54. Means of Egress and Evacuation: The means of egress in high- rise building shall comply with CBC Section 403.5.1 through 403.5.6.
55. Elevator Car: At least one elevator shall be provided for fire department emergency access to all floors. The medical emergency service elevator shall comply with gurney size per CBC Section 3002.4.
56. Exit and exit access to public way: Each building shall comply with requirements of CBC chapter 10 for path of egress travel to public way.
57. Emergency Responder Radio Coverage: Building shall have approved radio coverage for emergency responders within the building based upon the existing coverage level of the public safety communication system per California Fire Code Section 510.
58. Minimum Fire Flow/Fire Hydrants: All structures shall have the minimum fire flow (GPM) required by Appendix B Table B 105.1 and the quantity and spacing of fire hydrants as required by Appendix C Table C105.1 of Title 24, California Fire Code. Plans shall be submitted to the Pasadena Fire Department for review and approval prior the review and approval of the building plans.

NOTE: A current fire flow report (not older than 6-months), performed by the Pasadena Water Department, shall be provided to the Fire Department when applying for building permits to construct or add to any structures.

59. Fire Department Access: Fire Department Access shall be provided to within 150-feet of all exterior portions of any structure. All access roads exceeding 150-feet shall be provided

with an approved Fire Department Hammerhead or Turnaround. Fire department access shall be constructed of an all weather surface to support a minimum of 75,000 pounds with a minimum of 20-feet wide and unobstructed height of 13'-6", with No Parking on Either Side. No roadway way shall exceed 10% slope.

60. Aerial Fire Apparatus Access Roads: Building exceeding 30 feet in height above the lowest level of Fire Department Vehicle Access shall comply with requirements of CFC Section D105.1 through D105.3. Building shall have approved fire apparatus access roads capable of accommodating fire department aerial apparatus. Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.
61. Knox Box: All access gates across roadways or entrances to facilities shall fail unlocked/open in the event of any loss of power. All access gates and main entrance doors shall have a Knox Box or Knox Control Key Switch installed. Obtain Knox Box Applications from the Pasadena Fire Department Permit Desk.
62. Automatic Fire Sprinkler System or Standpipe: An automatic sprinkler system shall be provided throughout building per CBC Section 903.2.1 and PMC amended CFC section 903. Stand pipe system shall comply with the requirements of CBC Section 905.
63. Fire Department Fire Sprinkler Connections: Shall be comprised of:
  - FDC shall be located a minimum of 25-feet from the building or surface mounted to 2-hours rated wall with no opening within 10 feet and FDC shall be located within 100 feet of a public hydrant.
  - (2) 2-1/2" CLAPPERED internal swivel outlet X 2-1/2" CLAPPERED internal swivel outlet X 4" FDC
  - 4" CLAPPERED internal swivel outlet X 4" FDC
  - Shall be clearly labeled to indicate FDC for Fire Sprinklers and Standpipes.
  - A clear dimension of 3-feet shall be maintained around the perimeter of each fire department appliance.
  - All fire appliances except for fire hydrants shall be cleaned, primed, and painted fire engine red enamel or krylon.
64. Automatic Fire Alarm/Detection System: All structures 10,000 square feet or any structure required by Title 24, California Building or Fire Codes, shall be provided with a fully automatic and manual fire detection and notification system. Shop drawings shall be submitted by contractor for review and approval prior to construction. PMC amended CFC Section 907.
65. Emergency Vehicle Traffic Signal Preemption Systems: Traffic signaling systems serving this complex are required to have emergency vehicle signal preemption controls installed. The specific signals requiring this system is to be determined by both Pasadena Fire Department and Pasadena Department of Transportation. The fees for these systems will be determined based on the quantities and types of traffic signals being used and/or being retrofitted for the emergency vehicle controls.

### **Public Works Department**

66. In reference to the Department of Transportation conditions of approval on sidewalk widening along Arroyo Parkway frontage and California Boulevard frontage, the applicant

shall be responsible for all the costs required to complete the dedication. The dedication documents and processing fee shall be submitted to this office, at least three to four (3-4) months prior to the issuance of any permits. The dedication documents shall be executed and recorded prior to the issuance of a Certificate of Occupancy.

67. No private improvements may be placed within the public right-of-way, including, but not limited to, soldier beams, tie-backs, utility conduits, backflow preventers, transformers, fire sprinkler valve, decorative sidewalk and applicable parade post holes on Colorado Boulevard per Standard Drawing S-419. Private improvements may only be placed in the public right-of-way by submitting a license agreement, which must be approved by the City. The license agreement application for any private improvement within the public right-of-way shall be submitted to the Department of Public Works for review and shall be approved by the City before any permits are granted.

The applicant shall submit the application, plan and processing fee, associated with processing the license agreement, at least three to four (3-4) months prior to the issuance of any permits. An approved license agreement will allow the applicant to install and maintain the private improvements within the public right-of-way with conditions.

A license agreement for shoring requires an indemnity bond in order to guarantee that shoring and tie-backs are free from defect due to faulty material, workmanship and failure. Upon review of the license agreement exhibits, an indemnity bond estimate will be prepared and forwarded to the applicant. The estimated amount is equivalent to the cost of reconstructing the public right of way, including all affected utilities, public facilities, and infrastructures, based on the plane of failure at a 45-degree angle from the lowest point of excavation. The indemnity bond shall be submitted to the City prior to the execution of the agreement and the issuance of any building or demolition permits.

All steel rods in every tie-back unit shall be relieved of all tension and stresses, and any portion of soldier beams and any portion of the tie-backs located be removed entirely from the public right-of-way. A monthly monitoring report stamped and certified by a licensed surveyor shall be submitted to indicate that the deflection from any piles or soldier beams does not exceed one inch. Upon completion of construction, the developer or his contractor shall remove all tie-back rods within the public right-of-way. The removal shall be documented by a report certified by a licensed deputy inspector. The report shall be submitted to the City for review and approval. The applicant will be charged a penalty of \$7,000 for each tie-back rod not removed from the public right-of-way. For temporary tie-backs or shoring, the maximum width of the license area fronting the development frontage(s) shall only extend to the centerline of the public right-of-way.

68. In order to accommodate an Americans with Disabilities Act (ADA) compliant curb ramp, the applicant shall verify, and reconstruct if necessary, standard curb ramps at all four corners of Arroyo Parkway and California Boulevard intersection, if possible, per Caltrans Standard A88A or City of Pasadena Standard No. S-414. The curb ramp construction shall be completed prior to the issuance of Certificate of Occupancy. A separate permit from the Department of Public Works is required for all construction in the public right-of-way. Please contact 626-744-4195 for the general process.

Additional striping, signal work, and/or poles/utility relocations might be necessary. The curb ramps construction shall be completed prior to the issuance of Certificate of

Occupancy. A separate permit from the Department of Public Works is required for all construction in the public right-of-way. Please contact 626-744-4195 for the general process.

The applicant shall submit to the City for review any proposed designs that will comply with the ADA requirements. The applicant is responsible for the design, preparation of plans and specifications, and construction of the new curb ramp. Plans for the curb ramp improvements shall be prepared by a civil engineer, registered in the State of California. Upon submittal of improvement plans to the Departments of Public Works for review, the applicant will be required to submit fees, per the current General Fee Schedule, to cover the cost of plan checking and construction inspection of the improvements. Note that the building plans approved by the City's Planning (Building) Department do not constitute approvals for work in the public right-of-way. Separate plans shall be submitted to the Department of Public Works – Engineering Division – at 175 North Garfield Avenue Window 6. The applicant shall submit the curb ramp improvement plans and the plan check fees at least two (2) months prior to the issuance of any building or demolition permits.

Upon review of the curb ramp improvement plans, the applicant may need to dedicate to the City for street purposes the land necessary at the property line corner rounding (Per S-423) to provide for the minimum clearance required by the Americans with Disabilities Act standards. If so, the applicant shall remove and reconstruct the sidewalk for the dedicated area, per Standard Plan No. S-421. The applicant shall be responsible for all the cost required to complete the dedication, if it is required. The dedication document and processing fee shall be submitted to this office, at least three to four (3-4) months, prior to issuance of any permits. The dedication documents shall be executed and recorded prior to the issuance of a Certificate of Occupancy.

69. The existing street lighting fronting the subject site are substandard. In order to improve pedestrian and traffic safety, the applicant shall replace/renovate the existing street lighting with LED lights, per the City requirements and current standards, along the following frontage:
- a. One (1) street light along the California Boulevard frontage
  - b. Five (5) street lights along the Arroyo Parkway frontage

In the event where the existing street light pole determined, by the City, to be deteriorated and/or damaged, the applicant shall replace the existing street light pole with a new street light pole in kind. The replacement shall include but not limited to new pole, new footing, new LED light(s), conduit, conductors, lamp socket, fuse, globe/lantern, globe holder, photo cell, and other miscellaneous related parts. The applicant shall schedule a street lighting pre-inspection with the Public Works inspector to determine the details/scope of the replacement/renovation of the existing street lighting. Please contact 626-744-4195 or via email: [pw-permits@cityofpasadena.net](mailto:pw-permits@cityofpasadena.net) to schedule a street lighting pre-inspection, prior to the issuance of any permits.

70. The intersection of Arroyo Parkway and California Boulevard shall be upgraded as follow:
- a. The intersection safety lighting are HPS luminaires. To continue on more efficient energy and lighting, the existing luminaires should be changed out to LED HBL's to help in energy costs and more efficient lighting. SLATS will provide specifications for model and wattage, when consultant submits the luminaire calculations for SLATS review.

- b. The existing CCTV camera has reached its operating lifespan and needs to be replaced and upgraded. The new CCTV camera shall be a BOSCH MiC camera. SLaTS will provide the specifications.

Contact Rich Yee by phone at 626-744-4643 or email [RYee@cityofpasadena.net](mailto:RYee@cityofpasadena.net) for details.

71. The applicant shall restore and re-paint the existing metal street light pole along the California Boulevard frontage of the subject property in a manner acceptable to the Department of Public Works. In addition, the painting specification shall be per the Specific Plans and specifications. The cost of the street light pole and traffic signal pole/equipment restoration and painting is the applicant's responsibility.
72. The applicant is responsible for the design, preparation of plans and specifications, and the construction of all required street lights and traffic signal modification. Plans for the improvements shall be prepared by a civil engineer, registered in the State of California. Upon submission of improvement plans to the Departments of Public Works for checking, the applicant will be required to submit fees, per the current General Fee Schedule, to cover the cost of plan checking and construction inspection of the improvements. In addition, there is possibly considerable lead-time for the materials required for the construction and modification. In order to avoid delays in the development schedule, the applicant shall coordinate with this office at 626-744-4195 regarding this street light/traffic signal condition at least five (5) months in advance of the anticipated issuance of Certificates of Occupancy.
73. A section of Arroyo Parkway, fronting the subject development, is an asphalt concrete roadway. This reach shall be restored with half-width (from gutter to median island) cold milling and resurfacing of asphalt concrete roadway per Standard Plan S-415.
74. California Boulevard and portion of Arroyo Parkway is a concrete street, restoration of any utility trenches shall be per Standard Plan S-417. All street restoration shall be completed prior to the issuance of Certificate of Occupancy.
75. The applicant shall demolish existing and construct the following public improvements along the subject development frontage of Arroyo Parkway and California Boulevard, including concrete drive approach per Standard S-403; concrete sidewalk per Standard Plan S-421; concrete curb and gutter per Standard S-406. The public improvements shall be completed prior to the issuance of Certificate of Occupancy.
76. The proposed development shall connect to the public sewer with one or more new six-inch diameter house sewers laid at a minimum slope of two percent. In accordance with PMC Chapter 13.24.010, house sewer "means that part of the horizontal piping beginning 24 inches from the exterior wall of the building or structure and extending to its connection with the public sewer." The section of house sewers within the public right-of-way - from the property line to the public sewer, or within easement, shall be vitrified clay or cast iron pipe. The house sewer shall meet City Standards as determined by the Department of Public Works, and a permit issued by the Department of Public Works is required for work within the public right-of-way. The construction of all new house sewers shall be completed prior to the issuance of Certificate of Occupancy.
77. The applicant is responsible for the design, preparation of plans and specifications, and construction of all required public improvements. Plans for the above improvements shall be prepared by a civil engineer, registered in the State of California. Upon submittal of

improvement plans to the Departments of Public Works for review, the applicant will be required to submit fees, per the General Fee Schedule, to cover the cost of plan checking and construction inspection of the improvements. Note that building plans approved by the City's Planning (Building) Department do not constitute approvals for work in the public right-of-way. Separate plans shall be submitted to the Department of Public Works – Engineering Division – at 175 North Garfield Avenue Window 6. The applicant shall submit public improvements plans and the plan check deposit at least two (2) months prior to the issuance of any building or demolition permits.

78. On-site drainage, such as roof drain, area drain and subterranean garage discharge, shall be contained on-site per LA County Regional Water Quality Control Board's current permit.
79. The applicant shall plant one (1) Fern pine, *Afrocarpus gracilior*, tree along S. Arroyo Parkway frontage and one (1) Brisbane Box, *Lophostemon confertus*, tree along E. California Boulevard frontage, the officially designated street tree per the City's approved Master Street Tree Plan. The Department of Public Works will confirm eligible planting sites, and will provide the applicant the location, quantity.
80. Trees planted by the applicant must meet the City's tree stock standards, be inspected by the City, and be planted according to the details provided by the Parks and Natural Resources (PNR) Division. Planting shall include the installation of the following per tree: no less than two tree stakes; one arbor guard; and the use of slow-release fertilizer tablets. The applicant shall contact PNR (626-744-3880) for tree planting approval, a minimum of two (2) months, prior to the issuance of a Certificate of Occupancy.
81. Trees planted by the applicant must be irrigated by either an existing or a new irrigation system constructed by the applicant. Plans for the irrigation system shall be prepared by a landscape architect registered in the State of California and submitted to PNR for review and approval. Irrigation facilities (main line, valve, pull box, timer, etc.) must be constructed within private property with the exception of the laterals and bubblers. The lateral shall be a minimum of 18" deep, and no above-ground structures are allowed.
82. Prior to issuance of the Certificate of Occupancy, the applicant shall submit a Tree Guarantee Deposit equal to the cost of all new trees planted to guarantee that newly planted trees are maintained by the applicant for a minimum of three calendar years. Tree maintenance during this period shall include the following: watering no less than once a week; weed removal; reconstruction of tree wells as needed; re-staking as needed; adjustment to grade of any trees that settle; and any other operations needed to assure normal tree growth. The applicant shall replace any newly planted trees which, for any reason, die or whose health is compromised, within the applicant's three-year establishment period. The three-year tree establishment period shall commence on the day that the Certificate of Occupancy is issued. PNR shall inspect all trees planted by the applicant at the end of the three-year establishment period, and if the trees are found to be in good health, the applicant's deposit will be released. If the trees are found to be in poor health, the establishment period may be extended by PNR and the applicant's deposit shall be held accordingly. Said deposit may be included as part of the construction guarantee if applicable, and is subject to partial refund or additional billing.
83. To protect existing City trees during construction, the applicant shall fully conformed to the Tree Protection Guidelines signed by the City Manager. The full guidelines is available at

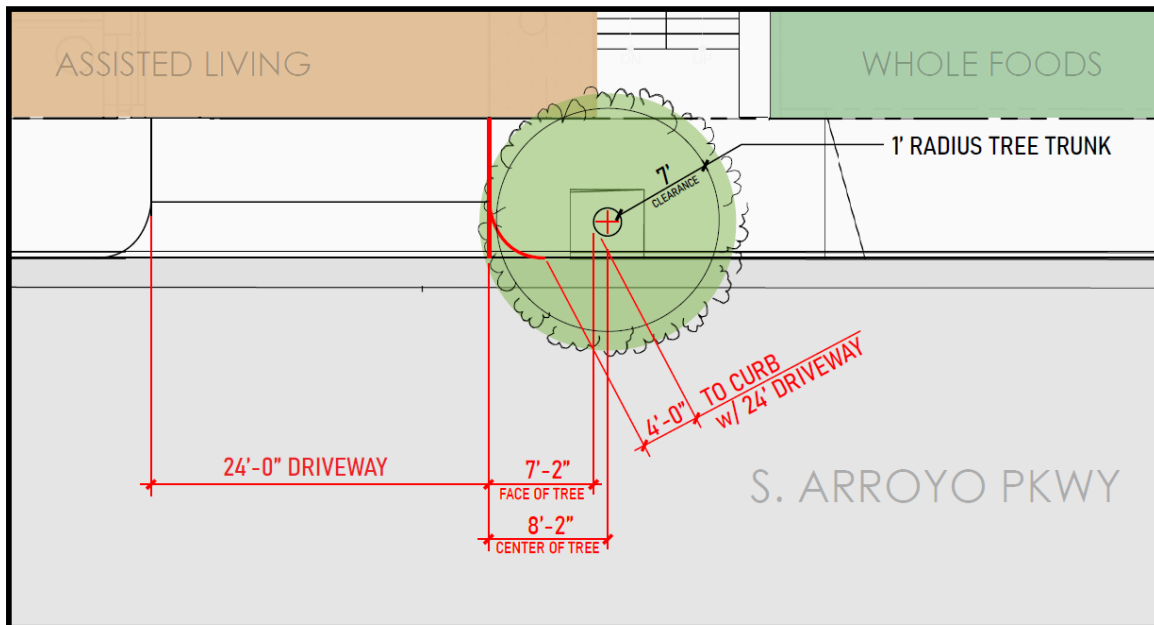
the following link: <https://www.cityofpasadena.net/public-works/engineering-and-construction/engineering/>.

84. Any existing street trees proposed to be removed are subject to the approval of the Urban Forestry Advisory Committee (UFAC).
85. A Tree Protection Zone (TPZ) shall be established for all existing City trees within the scope of a construction project. The TPZ extends from the base of the tree to four (4) radial feet beyond the dripline of a tree and applies to the entirety of the tree – from the roots to the canopy of the tree.

The applicant is prohibited from the following within a designated TPZ: construction vehicle access, construction vehicle operation, staging of materials, and trenching without the consent of the Department of Public Works.

The applicant shall at minimum provide the following within a designated TPZ: mulching, irrigation, and protective fencing.

86. Prior to the issuance of any permit, the applicant shall submit a Preliminary Tree Protection Plan (PMC Ch. 8.52 – City Trees and Tree Protection Ordinance), prepared by a Landscape Architect or certified Arborist, showing the TPZ and all structures, footings, and grading that may impact City trees shall be submitted to the Department of Public Works, for review and approval. Given that each construction project poses unique conditions, it is the responsibility of the applicant to develop a Tree Protection Plan based off the TPZ standards to the extent feasible. The Plan shall conform to the Tree Protection Standards which specifically require showing the locations of all existing trees, their diameters, canopies, whether the tree is a public tree or private tree, as well as any trees to be planted with their canopy at mature size. The final conditions of the Tree Protection Plan shall be approved by the Forestry Superintendent. A non-refundable flat fee, per the current General Fee Schedule, will be required for staff time to review the Tree Protection Ordinance compliance.
87. Prior to any construction, tree protections including the installation of fencing to protect public trees must be in place. The fencing material shall be chain-link attached to posts inserted into the ground at the edge of the dripline and shall be a minimum of 6' in height. See Standard Plan S-642 – Tree Protection Chain Link Fencing. Fencing shall maintain visual lines of sight in order to avoid vehicle and pedestrian hazards. Fencing shall include a minimum 8.5" x 11" warning sign with the following information: 'Tree Protection Zone'; name and contact information of project owner or authorized representative; 'Please contact the City of Pasadena Citizen Service Center to report any concerns (626) 744-7311'. All protective fencing must be permitted, inspected and approved by Public Works prior to the commencement of any construction.
88. All new drive approaches shall be at least seven (7) feet clear of the existing street trees measured from the edge of the trunk closest to the drive approach. All public trees shall be protected and fenced with a posting on the fences advising of the tree protection. The proposed 24-ft wide curb return driveway south of the existing Whole Foods building, as shown below, is exempt from this condition. The straight edge of the driveway will be 7'-2" from the edge of the existing tree, while end of the curb return is 4'-0" from the edge of the existing tree. The tree shall be protected by fencing per Standard S-642, and caution shall be exercised during construction of the driveway per Standard Plan S-402.



## DRIVEWAY EXHIBIT

555 S ARROYO PKWY, PASADENA, CA 91105



89. Prior to issuance of any permit, the applicant shall submit a valuation assessment report of the existing public tree(s) along the boundary of their project. The report shall be prepared by a registered Arborist and submitted to PNR for review and approval. If it is determined that the applicant has failed to care for any City tree within their Tree Protection Plan, and the health of the tree(s) was critically compromised requiring its removal, the applicant shall be liable for the following costs: assessed value of tree determined by a PNR Arborist using a current ISA assessment methodology; the removal cost determined by PNR; and any applicable infraction or administrative fines determined by Code Compliance.
90. Prior to issuance of any permit, a deposit in the amount of the applicant's total liabilities based on the aforementioned approved tree assessment report shall be submitted to the City. The deposit is fully refundable, less administrative fees, upon the satisfaction of Public Works prior to the issuance of a Certificate of Occupancy.
91. Past experience has indicated that projects such as this tend to damage the abutting street improvements with the heavy equipment and truck traffic that is necessary during construction. Additionally, the City has had difficulty in requiring developers to maintain a clean and safe site during the construction phase of development. Accordingly, the applicant shall place a \$20,000 deposit with the Department of Public Works prior to the issuance of a building or grading permit. This deposit is subject to refund or additional billing, and is a guarantee that the applicant will keep the site clean and safe, and will make



permanent repairs to the abutting street improvements that are damaged, including striping, slurry seal/resurfacing, curb, gutter, and sidewalk, either directly or indirectly, by the construction on this site. The deposit may be used for any charges resulting from damage to street trees. A processing fee will be charged against the deposit.

92. Prior to the start of construction or the issuance of any permits, the applicant shall submit a Construction Staging and Traffic Management Plan to the Department of Public Works for review and approval. The template for the Construction Staging and Traffic Management Plan can be obtained from the Department of Public Works webpage at: <https://www.cityofpasadena.net/public-works/engineering-and-construction/engineering/>. A non-refundable flat fee, based on the current General Fee Schedule, is required for plan review and on-going monitoring during construction. This plan shall show the impact of the various construction stages on the public right-of-way (and the private street) including all street occupations, lane closures, detours, staging areas, and routes of construction vehicles entering and exiting the construction site. An occupancy permit shall be obtained from the department for the occupation of any traffic lane, parking lane, parkway, or any other public right-of-way. All lane closures shall be done in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and California Supplement. If the public right-of-way occupation requires a diagram that is not a part of the MUTCD or California Supplement, a separate traffic control plan must be submitted as part of the Construction Staging and Traffic Management Plan to the department for review and approval. No construction truck idling or staging, material storage, or construction trailer are allowed in the public right-of-way.

In addition, prior to the start of construction or issuance of any permits, the applicant shall conduct a field meeting with an inspector from the Department of Public Works for review and approval of construction staging, parking, delivery and storage of materials, final sign-off procedure, and any of the specifics that will affect the public right-of-way. An appointment can be arranged by calling 626-744-4195.

93. In preparation for the New Year Rose Parade and Rose Bowl Game, the Department of Public Works will suspend all works within the public right-of-way during the holiday season in accordance to PMC 12.24.100 and City Policy.

In general, all public streets, sidewalks and parkways shall be free and clear of excavations and other construction related activities during the period of November through January of the following year. Specific dates will vary on an annual basis. Accordingly, contractors will be required to shut down construction operations which would impede traffic and pedestrian movements during these periods unless otherwise authorized by the City Engineer. Any existing excavations shall be backfilled, compacted and temporarily repaved before the beginning of the moratorium period.

The Holiday Moratorium Map, showing the appropriate shutdown period, and corresponding areas in the City, is available at the Department of Public Works Permit Counter (window #6), 175 N. Garfield Avenue, Pasadena, CA 91109, or at the following link: <https://www.cityofpasadena.net/public-works/engineering-and-construction/engineering/>.

94. All costs associated with these conditions shall be the applicant's responsibility. Unless otherwise noted in this memo, all costs are based on the General Fee Schedule that is in effect at the time these conditions are met. A processing fee will be charged against all

deposits. A Public Works permit is required for all construction and occupancies in the public right-of-way. If construction vehicles and equipment are parked off-site in the public right of way, the permit fee for street and sidewalk occupancy will be based on the area and duration corresponding to the current City's General Fee Schedule. For more information, please contact Yannie Wu-Bowman at 626-744-3762.

In addition to the above conditions, the requirements of the following ordinances will apply to the proposed project:

- Sewer Facility Charge - Chapter 4.53 of the PMC  
The ordinance provides for the sewer facility charge to ensure that new development within the city limits pays its estimated cost for capacity upgrades to the city sewer system, and to ensure financial solvency as the city implements the operational and maintenance practices set forth in the city's master sewer plan generated by additional demand on the system. Based on sewer deficiencies identified in the City's Master Sewer Plan, the applicant may be subject to a Sewer Facility Charge to the City for the project's fair share of the deficiencies. The Sewer Facility Charge is based on the Taxes, Fees and Charges Schedule and will be calculated and collected at the time of Building Permit Issuance.
- Sidewalk Ordinance - Chapter 12.04 of the Pasadena Municipal Code (PMC)  
In accordance with Section 12.04.035, entitled "Abandoned Driveways" of the PMC, the applicant shall close any unused drive approach with standard concrete curb, gutter and sidewalk. In addition, the applicant shall repair any existing or newly damaged curb, gutter and sidewalk along the subject frontage prior to the issuance of a Certificate of Occupancy in accordance with Section 12.04.031, entitled "Inspection required for Permit Clearance" of the PMC.
- City Trees and Tree Protection Ordinance - Chapter 8.52 of the PMC  
The ordinance provides for the protection of specific types of trees on private property as well as all trees on public property. No street trees in the public right-of-way shall be removed without the support of the Urban Forestry Advisory Committee. No trees shall be damaged by the proposed construction, if a City tree is damaged, the applicant may be liable for the assessed value of the tree. Refer to <https://www.cityofpasadena.net/public-works/parks-and-natural-resources/urban-forestry/> for guidelines and requirements for tree protection.
- Construction and Demolition Waste Ordinance, Chapter 8.62 of the PMC  
The applicant shall submit the following plan and form which can be obtained from the Permit Center's webpage at: <https://www.cityofpasadena.net/public-works/recycling-resources/construction-demolition-recycling/construction-and-demolition-debris-recycling/> and the Recycling Coordinator, (626) 744-7175, for approval prior to the request for a permit:
  - a. C & D Recycling & Waste Assessment Plan – Submit plan prior to issuance of the permit. A list of Construction and Demolition Recyclers is included on the waste management application plan form and it can also be obtained from the Recycling Coordinator.
  - b. Summary Report with documentation must be submitted prior to final inspection.

A security performance deposit of three percent of the total valuation of the project or \$30,000, whichever is less, is due prior to permit issuance. For Demolition Only projects, the security deposit is \$1 per square foot or \$30,000, whichever is less. This deposit is fully refundable upon compliance with Chapter 8.62 of the PMC. A non-refundable Administrative Review fee is also due prior to permit issuance and the amount is based upon the type of project.

### **Department of Transportation**

95. As a project adjacent to the Metro L line tracks, and an active at-grade light rail transit crossing, the project applicant will meet and confer with Metro regarding construction and coordination prior to the commencement of construction and shall continue through completion of construction.
96. In accordance with City Ordinance No. 7157, the project is subject to the City's Trip Reduction Ordinance (TRO) requirements. As indicated in the ordinance, a Transportation Demand Management (TDM) Plan shall be prepared prior to the issuance of the first permit for construction.

To understand the TDM Plan requirements and associated review fees\* for the report submittal, contact the Mobility, Planning, Operations and Engineering Division at (626) 744-7526 to arrange a pre-design meeting.

\* Based on the Current General Fee Schedule. Fees are subject to change.

97. The project traffic exceeds the street segment thresholds at the following locations:

- Marengo Avenue between Bellevue Drive and California Boulevard
- Bellevue Drive between Arroyo Parkway and Marengo Avenue

DOT acknowledges that the project's effects to the street segments will remain.

The applicant is required to develop and implement a targeted Complete Streets Plan with input from the affected residents, Council Districts, and DOT. There shall be a minimum of three (3) meetings with the community. The goals of the Plan include:

- Encouraging the use of non-vehicular transportation modes by the project's patrons and residents.
- Developing feasible safety enhancements to encourage non-motorized use for travel.
- Enhancing motorist safety through striping, signage, and physical improvements.

Public meetings shall be completed, and the Complete Streets Plan shall be submitted to DOT prior to the issuance of the Certificate of Occupancy for Building B. The referenced final Complete Streets Plan must be approved by DOT and any improvements must be implemented, or bonded for, prior to the issuance of the Certificate of Occupancy for Building A.

\*\*\*The above condition does not apply if the project exchange is the chosen option for construction.

98. The following equipment shall be installed at the designated locations:

- CCTV at the Arroyo Parkway and Bellevue Drive intersection
- CCTV at the Raymond Avenue at California Boulevard intersection
- Video data collection and performance monitoring system at the Arroyo Parkway at Bellevue Drive intersection
- Video data collection and performance monitoring system at the Arroyo Parkway at California Boulevard intersection
- Video data collection and performance monitoring system at Raymond Avenue and California Boulevard intersection

The equipment shall be installed prior to the issuance of the Certificate of Occupancy. Please contact the Traffic Operations Division at (626) 744-8723 to arrange a pre-design meeting to understand the requirements for the project.

\*\*\*The requirement to install video data collection equipment above does not apply if the project exchange is the chosen option, but the CCTVs at the intersections of Arroyo Parkway/Bellevue Drive and Raymond Avenue/California Boulevard are still required under the project exchange option.

99. Pursuant to the adopted Street Design Guide by the City Council, the applicant shall comply with the following:

- The existing sidewalk along Arroyo Parkway is 10' wide. The project shall provide a 3' sidewalk easement to allow for a 13' wide concrete sidewalk that will begin south of the existing historic commercial building to be retained at 523 South Arroyo Parkway to California Boulevard. Up to six columns may encroach up to 3' into the sidewalk easement, spaced a minimum of 20' apart. Any and all subsurface shoring, structure, parking or other required mechanical, electrical spaces may encroach to the existing property line. The remainder of the existing sidewalk along Arroyo Parkway shall remain 10' wide.
- The existing sidewalk along California Boulevard is 10' wide. The project shall provide a 2' sidewalk easement to allow for a 12' wide concrete sidewalk along the project's frontage. Any and all subsurface shoring, structure, parking or other required mechanical, electrical spaces may encroach to the existing property line.

100. The site will have medical offices and senior housing elements. Both types of use are served regularly by Pasadena Dial-A-Ride and other accessible type shuttles. The property on-site shall accommodate the convenient, safe and accessible pick-up and drop-off of accessible type shuttles that are up to 25' long, 8' wide and 10' tall. The turning radius wall to wall is 60'. This shall be the case even if the senior housing is considering having their own shuttle.

Please contact the Transit Division at (626) 744-4055 to arrange a pre-design meeting to understand the requirements for the project.

101. All existing bus zones and transit amenities shall remain in place and protected during construction. The existing bus zone will not be relocated without prior written approval from the Transit Division. Tree wells, street lights, fire hydrants and other items shall not be placed in the public right of way within bus zone(s) without prior approval. The proposed project

shall not interfere with bus operations (this includes, but is not limited to, building overhangs, awnings, landscaping, etc.)

102. There is an existing active bus stop adjacent to the proposed California Boulevard driveway. Additionally, the project is immediately adjacent to the existing Metro L line tracks. The development shall not interfere with any transit activity during and after construction without written permission on file by the appropriate transit agencies that may be affected.
103. Construction-related traffic (delivery trucks or haul trucks) shall be restricted to the hours between 9:00 AM to 3:00 PM, or as approved by the Department of Transportation, to limit the peak hour traffic conflict along the local street network.
104. Any project loading/unloading spaces shall be on-site. DOT will not install a loading zone for project use along the project's street frontages.
105. The developer should provide the required vehicle and bicycle parking spaces required for the project as directed by the Planning Department.
106. All required parking shall be on-site. No permanent, on-street, overnight parking permits will be issued to future residents of this project. Future tenants shall be advised of this condition by the private development staff.
107. If a gate to the parking area is proposed, it shall be installed at least 40' back from the property line to allow for adequate stacking for cars entering the parking garage.
108. Driveways should be a minimum 20' wide to provide for adequate passing of two-way traffic.
109. Driveways shall be located a minimum distance of 50' from any intersection and approved by the Department of Transportation prior to the issuance of the first permit for construction (demolition, grading, or building).
110. To improve the safety of pedestrians crossing the driveways as well as improve vehicular sight distance, there shall be a slope of 2% or less for a minimum of 20' feet beyond the property line before the start of the subterranean ramp.
111. The project shall pay the Traffic Reduction and Transportation Improvement Fee (TR-TIF) for the project at the time of building permit issuance. The TR-TIF is subject to change based on the General Fee Schedule at the time of permit issuance. Total payment would be based on the final project scope.

### **Pasadena Water and Power – Power**

Pasadena Water & Power (PWP), Power Delivery shall provide electric service to the proposed development contingent upon satisfying all the requirements listed below:

112. Power Infrastructure:
  - There are existing 17KV underground distribution facilities in close proximity (located along Arroyo Pkwy) of the proposed project location.



- Transformer vault/room shall have an access hatch from above (open to sky) for equipment installation purposes and drivable PWP truck access.
  - Transformer room(s) located within a building structure shall be rated for 4-hour fire separation and meet all local Building & Fire Department requirements related to room ventilation and alarming.
  - Owner/developer shall be responsible for installing lighting, receptacles, ground rods, and air blowers inside transformer vault/room.
  - Owner/developer shall be responsible for installing vent pipes from transformer vault/room to open air for proper air circulation.
  - Owner/developer shall be responsible for the maintenance of the transformer vault, and allow access to the transformer room at all times to Department personnel and vehicles in accordance with the Department Electric Service Requirements Regulation 21.
  - PWP shall install primary service laterals from the street vault to the property line (if necessary) at the developer's expense.
  - Owner/developer shall be responsible for picking up and extending primary service laterals from the property line to the transformer vault/room.
  - Owner/developer shall install secondary service conduits from transformer vault/room to electrical room.
  - PWP shall install electrical service transformers, cables, and electric meters.
  - All PWP installation costs shall be paid by the developer prior to scheduling of any work.
116. Distributed Generation: Owner/developer installed distributed generation resources that will be interconnected to the Pasadena Electric Distribution System shall be installed in accordance with the Department Distributed Generation Interconnection Requirements Regulation 23. In addition, all customer installed solar photovoltaic (PV) resources shall meet all of the requirements of local building codes, Fire Department and the Pasadena Solar Initiative Program.
117. Coordination of Electric Service:
- a. In order to determine the specific requirements of the electrical service for this project and to begin the coordination of service, the following items will need to be included in the submittal:
    - Electric Service Application
    - Electrical Plans (single-line diagram, load calculations).
    - Site plan & elevation plan showing proposed transformer vault/room location & electrical switchgear/meter location.
    - \$5,000.00 Deposit
  - b. Total cost for providing electric service to this development will depend on service size and the extent of civil work required in the public right of way. A cost shall be provided to the owner/developer after the submittal is received and a PWP power design is finalized.

### **Pasadena Water and Power – Water**

118. Any change in water service will be reviewed when the building plans are submitted. Any change in service will be installed at actual cost and paid for by the owner/developer, pursuant to PWP Water Regulation Section XI. All service pipes shall be of suitable capacity

as determined by applicable plumbing and fire codes. The minimum sized service installed by PWP is 1-inch.

119. Water Main Charge: If it is determined that a water main must be upgraded due to size, age, pressure deficiencies, and/or the integrity of the existing water main; the upgrade will be paid for by the owner/developer. A deposit will be requested for the water main design and a cost estimate will be provided to the owner/developer for the new water service installations, main design, and main construction. The owner/developer must be aware that the design of a new water main will take 3 to 4 months after the initial deposit is made by the owner/developer. Also, an additional 4 to 6 months will be needed for the construction of the water main after the balance of the estimate is paid in full by the owner/developer. The design and construction estimated time depends on the size and length of the water main and other mains in the queue. For this reason, it is imperative that the initial deposit be submitted promptly. Also, the owner/developer will pay in full any street restoration that is required by PWD. PWD determines the limits of the street restoration.
120. Water Division Requirements:
- Water lines are not permitted to cross lot lines to serve adjoining lots without a utility easement; the Pasadena Water Division shall approve all proposed easements.
  - The Water Division will install the service tap, lateral, water meter and designate the distribution main and service tap.
  - All services not in use must be abandoned at the distribution main at the applicable rate.
  - For subdivided lots with one unit behind the existing, show easement documentation and assessor parcel map showing the subdivision.
121. Cross Connection Requirements for Domestic Services:
- All city cross-connection prevention policies must be adhered to. The developer is required to provide back-flow protection at all connections whereby the plan arrangement or configuration could potentially contaminate the domestic water system.
  - There shall be no taps between the meter and the backflow assembly.
  - The owner/developer shall provide and install an approved double check valve backflow prevention assembly at each water service if more than one water service serves property. The location of the back-flow prevention assembly shall be above ground within 20-feet of the property line.
  - The property owner is responsible for the back-flow prevention assembly. The assembly will be registered and require an annual test certification. All manufacturer warranties shall be transferred upon installation and certification to the property owner.
  - The owner/developer is responsible for certifying and testing the assembly after installation by a person that possesses a current and valid license, and must be certified by the County of Los Angeles Department of Health Services.
  - The owner/developer shall submit the results of the test to the Water Utility Service Section for approval. Upon approval, the City will maintain domestic water to the property and will automatically register the assembly.
  - All water services shall be protected from cross connections by means of approved backflow prevention techniques and assemblies.
  - An administrative fee of \$180.94 will be charged for each backflow prevention assembly installed.



122. Cross Connection Requirements for Fire Service:

- The fire service requires a detector meter and back-flow prevention assembly.
- The assembly shall be located in a readily accessible location for meter reading, test and maintenance.
- All fire sprinkler systems require installation of an approved double check valve backflow prevention assembly at the sprinkler lateral off the domestic system.
- Contract service other than PWP, providing the backflow prevention assembly shall contact the Water Utility Services Section to verify assembly approval or contact the University of Southern California foundation for Cross Connection Control and Hydraulic Research for an approve list of assemblies.
- All manufacturer warranties shall be transferred upon installation and certification to the property owner. The property owner shall assume ownership of the back-flow prevention assembly. The assembly will be registered and require an annual test certification.
- If PWP is to provide DCDA for fire service, PWP will install Wilkins, model 450 DA.
- Choose from one of the below listed options and incorporate into the fire sprinkler plans.

Option 1:

Detector meter located on double check detector check assembly (DCDA) outside the structure on private property.

- The Water Division will install the service tap, lateral, DCDA (optional Wilkins, models 350 DA or 450 DA) and designate the distribution main and service tap.
- The location of the back-flow prevention assembly shall be a minimum of 12-inches above grade within 10-feet of the property line, on private property. Reference Water Division Plan Check for certification and registration.

Option 2:

Detector meter located in a vault within the public right of way with a double check valve backflow prevention assembly (DCA) provided and installed inside or outside the building by the owner/developer.

- The Water Division will install the service tap, lateral, detector water meter and designate the distribution main and service tap.
- The location of the back-flow prevention assembly shall be a minimum of 12-inches above grade within 20-feet of the property line on private property. Reference Water Division Plan Check for certification and registration.

123. All Other Cross Connection Requirements: The owner/developer is also responsible for additional cross connection requirements for irrigation system, swimming pool and/or spa, boiler / chilled water / cooling tower (using chemical additives), domestic water line at makeup to carbonation system, sewage ejector, decorative water fountain, and makeup water to reverse osmosis filtration equipment.

124. Residential Water Metering Requirements:

Senate Bill No. 7 (Housing: water meter: multiunit structures) approved by the Governor September 25, 2016, requires that individual meters or submeters be installed on all new multifamily residential units. Per Senate Bill No. 7: Each water purveyor that sells, leases, rents, furnishes, or delivers water service to a newly constructed multiunit residential structure or newly constructed mixed-use residential and commercial structure for which an application for a water connection, or more than one connection, is submitted after January

1, 2018, shall require a measurement of the quantity of water supplied to each individual residential dwelling unit as a condition of new water service. The law exempts long-term health care facilities, low-income housing, residential care facilities, housing at a place of education, and time-share properties, as well as, other multiunit residential structures deemed infeasible by the Department of Housing and Community Development.

Per the Water Regulations adopted by City Council on June 4, 2012: "The water service will end at the curb, public right of way or property line at the option of PWP. Where the location of the meter box or vault on the City side of the property line is not practicable, the meter box or vault shall be located on the Customer's premises or such other location that may be agreed upon by PWP at its option. The Customer shall be responsible for the expense of installation and maintenance of the lines on the Customer's side of the property line connecting to PWP's service where construction of the Customer's facilities began."

The following submetering options are available for PWP customers:

Option 1:

Individual metering located on the parkway.

The Water Division will install individual water meters on the parkway in front of the project site, if permitted by available space as per the General Requirements, for each residential unit. The owner/developer shall install an approved double check valve backflow prevention assembly at each domestic water service. All dedicated irrigation services must have a Reduced Pressure Zone Valve Assembly ("RP"). The location of the backflow prevention assemblies shall be above ground within 20-feet of the property line, and the assemblies require registration and annual test certifications. PWP's responsibility of service ends at the meter and PWP will bill each tenant directly.

Option 2:

Individual metering located on private property.

The Water Division will install a service lateral up to the property line with a shut off valve. The owner/developer shall provide and install an approved double check valve backflow prevention assembly after the shut off valve and will install all piping behind the property line. The location of the backflow prevention assembly shall be above ground within 20-feet of the property line, and the assembly requires registration and an annual test certification. The owner/developer will pay for and install all water meters, provided by PWP, to each residential unit. Water meters must be installed horizontally and must be located in an open area or in a garage/parking area and must have a minimum 12-inch above grade in order for meter readers to have unrestricted access to them if needed. All dedicated irrigation services must have a RP. PWP will inspect the individual meters as a condition of providing service. PWP's responsibility of service ends at the property line and PWP will bill each tenant directly.

Option 3:

Submetering by third party vendor located on private property.

The Water Division will install master water meter(s) on the parkway, in front of the project site. The owner/developer must submit a statement on letterhead stating that a Contractor licensed by the California State License Board will install submeters, per Senate Bill No. 7, to all residential units. The owner/developer shall install an approved double check valve backflow prevention assembly on each submeter. All dedicated irrigation services must

have a RP. The backflow prevention assemblies require registration and annual test certifications. PWP will inspect the submeters as a condition of providing service. PWP's responsibility of service ends at the master meter and the owner/developer is responsible for billing each tenant per Senate Bill No. 7.

#### 125. Fire Flow and Fire Hydrants:

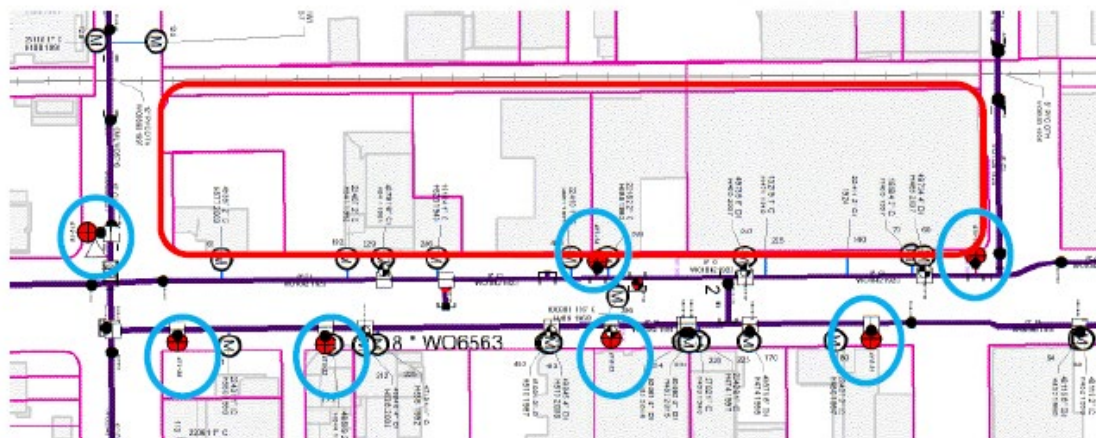
The Pasadena Fire Department (PFD) has jurisdiction and establishes the requirements for fire protection within the City of Pasadena. PFD must be consulted in this regard. Any cost incidental to providing adequate fire protection for the project must be paid for by the owner/developer.

There are seven fire hydrants in close proximity to the project site:

- Fire hydrant 418-16 is located on the southwest corner of Arroyo Parkway and Bellevue Drive.
- Fire hydrant 418-31 is located on the east curb of Arroyo Parkway, approximately 80 feet south of Bellevue Drive.
- Fire hydrant 418-22 is located on the east curb of Arroyo Parkway, approximately 350 feet south of Bellevue Drive.
- Fire hydrant 418-14 is located on the west curb of Arroyo Parkway, approximately 370 feet south of Bellevue Drive.
- Fire hydrant 418-32 is located on the east curb of Arroyo Parkway, approximately 200 feet north of California Boulevard.
- Fire hydrant 419-38 is located on the northeast corner of Arroyo Parkway and California Boulevard.
- Fire hydrant 419-18 is located on the southwest corner of Arroyo Parkway and California Boulevard.

There are no current fire flow tests available for these hydrants. If you would like to request a fire flow test, please contact Linette Vasquez at (626) 744-7064.

Fire Hydrant Details:



**ATTACHMENT C**  
**PRELIMINARY CONSULTATION COMMENTS**



PLANNING & COMMUNITY DEVELOPMENT DEPARTMENT  
PLANNING DIVISION

May 26, 2021

The Arroyo Parkway, LLC  
716 Mission Street  
South Pasadena, CA 91030

Via email: [bsiwy@edgewoodrealty.com](mailto:bsiwy@edgewoodrealty.com)

**NOTICE OF DESIGN COMMISSION COMMENTS**  
**Application for Preliminary Consultation**  
**465-577 S. Arroyo Parkway (CD-6 Zoning District)**  
Case #: DHP2021-00040

Council District 6

Dear Applicant,

On May 25, 2021, at a virtually held public meeting, the Design Commission, acting under the provisions of Section 17.61.030 of the Pasadena Municipal Code, reviewed your application for Preliminary Consultation for the proposed demolition of 6 existing buildings, preservation of 3 existing historic buildings and construction of a new approximately 154,000 sf medical office building and an approximately 184,376 sf assisted & independent living building at the above-referenced addresses. The design guidelines applied to this review were the design-related goals and policies in the Land Use Element of the General Plan, the design guidelines in the Central District Specific Plan, and the Secretary of the Interior's Standards for Rehabilitation. The Commission generally agreed with the comments in the staff report, which are reiterated below, and provided additional comments on the preliminary design, also listed below:

1. The proposed buildings are substantially higher than existing surrounding development and also exceed the height limit for new development along Arroyo Parkway. While the current design appropriately places lower-scaled volumes at the street edge with taller volumes behind, and incorporates strategies to provide lower volumes and open access points adjacent to the historic buildings to be retained, the height and massing of the buildings should continue to be studied to incorporate street-edge volumes that comply with the height limit of the Zoning District, as well as additional lower-height volumes north of the historic buildings. Consider placing building volumes over portions of the central vehicular access driveway and drop-off zone, particularly toward the western side of the site, to allow for creation of additional massing articulation without significant reduction in proposed floor area. Additional lower-scaled volumes could be placed adjacent to the historic buildings to further complete the streetscape and site; the small two-story volume behind the buildings could be slightly increased in height to create a more evident height transition from the historic buildings to the taller volumes to the west. If Fire Department access is a constraint on the site, demonstrate this in future submittals.

2. Continue to explore ways that the different buildings and uses on the site interact with and relate to each other, both functionally and architecturally, including the existing historic buildings and the Whole Foods Market. In future submittals, provide exhibits to demonstrate how the design features of the new buildings relate proportionally to those of the historic buildings to be retained. Further study creation of a base element that relates better to the smaller scale historic buildings and ensures they are not overwhelmed by the larger scale of the proposed new construction.
3. Incorporate additional entrances to the commercial space and medical office building lobby from Arroyo Parkway and California Boulevard. Provide architectural frontage elements and other architectural treatments to highlight the main building entries; consider incorporating an arcade at the street corner. Further define the proposed uses of the historic buildings and ensure that they maintain visual and functional engagement with the public realm. The middle portion of the block should be further activated.
4. Provide a pedestrian circulation plan that outlines the intended paths of travel for the various users of the site and ensure that the buildings, open spaces and vertical circulation points are integrated with public and private pedestrian pathways that are meaningful, comfortable and inviting. Provide additional detail of the design and orientation of stairs and elevators that terminate in outdoor locations adjoining the public realm, or consider removing/relocating these circulation points to better integrate them into the design of the buildings.
5. Further define the programming of open spaces and ground-level plazas and ensure that design features to support the intended uses of these spaces are incorporated into the design. The interior of the site feels crowded and the spaces between buildings are undefined. The massing of the two buildings should be completed/connected on the west side to enclose the open space and the gap between the medical office building and the historic building north of it should be narrowed. Consider placing drop-off zones underground. In general, the pedestrian scale of the project along the street edges should be improved.
6. Further study the treatment of rooflines and parapets in conjunction with the Central District design guidelines. Ensure that the tops of the buildings are articulated from the middle portions below and are visually attractive, sculptural and detailed in a manner consistent with the design of the buildings.
7. The historic buildings to be retained should be carefully reviewed by a qualified Historic Architect to identify rehabilitation treatments to be implemented in conjunction with the proposed project. Any structural or exterior cosmetic damage that is identified should be repaired and any missing or altered exterior features restored in conjunction with the project. Provide a rehabilitation plan for the buildings in future design review submittals.
8. Explore the ideas of wellness and inclusivity for seniors that will be occupying the site. Search for ways to create greater synergy and connections between the uses on the site.

## **NEXT STEPS**

This completes the Preliminary Consultation process. As your project moves forward to Concept Design Review, the new building designs should endeavor to address and respond, in writing and/or graphically, to the comments above. If the comments are not satisfactorily addressed, revisions to the submitted plans may be required and the approval process for your project may be delayed.

Please contact me if you have any questions about this letter.

Sincerely,

A handwritten signature in black ink, appearing to read 'K. Johnson', followed by a horizontal line.

Kevin Johnson  
Senior Planner  
Design and Historic Preservation Section  
Tel: 626-744-7806  
Email: kevinjohnson@cityofpasadena.net

cc: Energov; Address file

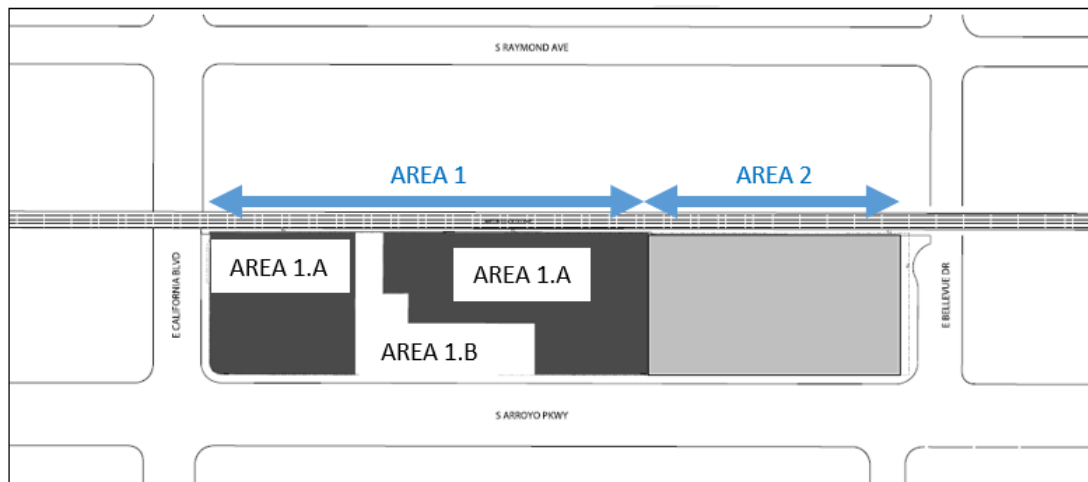
**ATTACHMENT D**  
**DRAFT PD PLAN**



## PD – 39 – The Affinity

Planned Development 39 – The Affinity shall comply with Pasadena Municipal Code Chapter 17.30 Central District Specific Plan and the Central District Specific Plan Design Guidelines. The following zoning standards shall apply and supersede any inconsistent or different standards established by the Pasadena Municipal Code, Central District Specific Plan and the Central District Specific Plan Design Guidelines, but only for the development plan referred to in Section [x] of Ordinance [xx]. The special development standards are as follows:

- A. Development Program.** The PD-39 Development Plan includes Area 1 and Area 2 as shown in Figure 1.



- B. Allowed Uses.** Table I (Land Use and Permit Requirements) identifies the land uses allowed and the land use permit required to establish each use, in compliance with applicable sections of Title 17 of the Pasadena Municipal Code as specified.

Symbol	Permit Requirement	Procedure is in Section:
P	Permitted use, Code Compliance Certificate required	17.61.020
MC	Conditional use, Minor Conditional Use Permit required	17.61.050
C	Conditional use, Conditional Use Permit required	17.61.050
E	Conditional use, Expressive Use Permit required	17.61.060
TUP	Temporary Use, Temporary Use Permit required	17.61.040
—	Use not allowed. (See Section 17.21.030.A regarding uses not listed.)	

**Standards for specific land uses.** Where the last column in the tables (“Specific Use Standards”) includes a section number, the regulations in the referenced section apply to the use in addition to all other applicable provisions of this Zoning Code.

Table I Land Use and Permit Requirements	Area 1	Area 2	Specific Use Standards
<b>RESIDENTIAL USES</b>			
Boarding houses	--	P	
Caretakers quarters	--	P	
Dormitories	C	C	
Fraternity/sorority housing	--	C	
Home occupations	P	P	17.50.110
Mixed-use projects	P(1)	P	17.50.160
Multi-family housing/urban housing	P(1)	P	17.50.350
Residential accessory uses and structures	P	P	17.50.210, 17.50.250
Residential care facilities, general	P	C	
Residential care facilities, limited	--	P	
Single-room occupancy	--	P	17.50.300
Supportive housing	--	P	
Transitional housing	--	P	
<b>RECREATION, EDUCATION &amp; PUBLIC ASSEMBLY USES</b>			
Clubs, lodges, private meeting halls	--	C	
Colleges – traditional campus setting	--	C	
Colleges – nontraditional campus setting	--	P	
Commercial entertainment*	E	E(2)	17.50.130
Commercial recreation – indoor*	C	C	17.50.130
Commercial recreation – outdoor	--	C(2)	17.50.130
Conference centers	--	C(2)	
Cultural institutions*	P	P(2)	
Electronic game centers	--	C(2)	17.50.100
Internet access studios	--	C(2)	17.50.100
Park and recreation facilities	--	C	
Religious facilities	--	MC	17.50.230

with columbarium	--	MC	17.50.230
with temporary homeless shelter	--	MC	17.50.230
Schools – public and private	C	C	17.50.270
Schools – specialized education and training	--	P(2)	
Street fairs	--	P	
Tents	P	P	17.50.320
<b>OFFICE, PROFESSIONAL &amp; BUSINESS SUPPORT USES</b>			
Automated teller machines (ATM)*	P	P	17.50.060
Banks, financial services*	P	P(2)	
with walk up services*	P	P(2)	17.50.060
Business support services	P	P(2)	
Offices - accessory	P	P	
Offices - administrative business professional	P	P(2)	
Offices - government	P	P(2)	
Offices - medical	P	P(2)	
Research and development - Offices	P	P(2)	17.50.240
Work/live units	--	P(2)	17.50.370
<b>RETAIL SALES USES</b>			
Alcohol sales - beer and wine	C	C	17.50.040
Alcohol sales - full alcohol sales	C	C	17.50.040
Animal services - retail sales*	P	P(2)	
Bars or taverns*	C	C(2)	17.50.040
with live entertainment*	C	C(2)	17.50.130
Commercial nurseries	--	P(2)	
Convenience stores*	C	C	
Food sales	P	P(2)	
Internet vehicle sales	--	P(2)	
Liquor stores*	C	C(2)	

Pawnshops*	--	C(2)	17.50.200
Restaurants*	P	P(2)	17.50.260
Restaurants, fast food*	P	P(2)	17.50.260
Restaurants, formula fast food*	P	P(2)	17.50.260
Restaurants with limited live entertainment*	P	P(2)	
Restaurants with walk-up window*	C	C	17.50.260
Retail sales*	P	P(2)	
Seasonal merchandise sales	P	P	17.50.180
Significant tobacco retailers*	C	C(2)	17.50.330
Swap meets	--	C(2)	
Temporary uses	TUP	TUP	
Vehicle services – automobile rental	--	C(2)	
Vehicle services - sales and leasing - limited*	MC	MC	
<b>SERVICES</b>			
Adult day-care, general	P	C	
Adult day-care, limited	--	P	
Ambulance services	P	P(2)	
Animal services – boarding	C	C(2)	
Animal services – grooming	P	P(2)	
Animal services – hospitals	--	P(2)	17.50.050
Animal shelters	--	C	
Catering services	P	P(2)	
Charitable institutions	C	C	
Child day-care centers	P	P	17.50.080
Child day-care, large care homes, 9 to 14 persons	--	P	17.50.080
Child day-care, small care homes, 1 to 8 persons	--	P	
Detention facilities	--	C	
Emergency shelters	--	MC	

Emergency shelters, limited	--	P	17.50.105
Filming, long term	C	C	
Filming, short term	P	P	
Laboratories	P	P(2)	
Life/care facilities <sup>a</sup>	P	C	
Lodging – bed and breakfast inns	--	P(2)	17.50.140
Lodging – hotels, motels	--	C (2)	17.50.150
Maintenance or repair services	P	P(2)	
Massage establishments	--	C(2)	17.50.155
Medical Services – Extended Care	P	--	
Medical Services – Hospital	C	C	
Mortuaries, funeral homes	--	C(2)	
Personal Improvement Services*	P	P(2)	
Personal Services*	P	P(2)	
Personal services restricted	--	C(2)	17.50.200
Printing and publishing*	P	P(2)	
Printing and publishing, limited*	P	P	
Public safety facilities	--	C	
Vehicle services - washing and detailing, small-scale	P	P	17.50.290
Vehicle services – washing and detailing, temporary	--	P	17.50.290
<b>INDUSTRY, MANUFACTURING AND PROCESSING USES</b>			
Alcohol beverage manufacturing	--	C(2)	17.50.040
with accessory tasting room	--	C(2)	17.50.040
Custom manufacturing/artisan production	--	P	
Industry, restricted	--	C(2)	
Industry, restricted, small scale	--	P	
Industry, standard	--	C(2)	
Recycling – small collection facilities	--	C	17.50.220

Research and development - Non-Office	P	P(2)	17.50.240
<b>TRANSPORTATION, COMMUNICATIONS, AND UTILITY USES</b>			
Accessory antenna array	P	P	
Alternative fuel/recharging facilities	--	C	
Communications facility	--	P(2)	
Commercial off-street parking	--	MC	
Transit terminal	--	C	
Utility, major	--	P	
Utility, minor	P	P	
Wireless telecommunication facilities, co-located (SCL)	P	P	17.50.310
Wireless telecommunication facilities, minor	MC	MC	17.50.310
<p>*Pedestrian-oriented uses</p> <p><sup>a</sup>A life/care facility is an integrated facility that provides accommodations for, and varying level of care to, residents depending on need. The use shall contain the following components: independent living units, assisted living, residential care facilities, and continuing care facilities. The use may include but is not required to include skilled nursing, Alzheimer and related facilities.</p> <p>(1) Allowed only as part of the Land Use Exchange, per Section D below.</p> <p>(2) Conditional Use Permit approval required for new construction exceeding 25,000 sq. ft. See Section 17.61.050.J for additional requirements.</p>			

**C. Development Caps.** Maximum development capacity is provided in Table II.

Table II Development Caps	Area 1	Area 2	Buildout
Gross Floor Area (sf)	344,258 <sup>a</sup>	73,671	417,929
Dwelling Units	289 <sup>b</sup>	-	289
<p><sup>a</sup> Up to 98,576 square feet of floor area may include independent living units.</p> <p><sup>b</sup> Up to 95 dwelling units may be provided as independent living units.</p>			

**D. Land Use Exchange.** Up to 151,000 square feet of floor area in Area 1 may be devoted to multifamily residential dwelling units with up to a maximum of 3,000 square feet, on the ground floor, devoted to commercial uses. Residential amenities, including but not limited to a leasing office, gym, kitchen, conference, etc., shall not be counted against the maximum commercial square feet.

## E. Development Standards

1. **New Construction.** Area 1 shall not exceed a maximum of 338,376 gross square feet of new construction. Inclusive of Area 1 and Area 2, the total Development Program shall not exceed 417,929 gross square feet.
2. **Floor Area Ratio (FAR).** The Development Program shall not exceed a maximum FAR of 2.89.
3. **Density.** The Development Program shall not exceed a maximum residential density of 87 dwelling units per acre.
4. **Dwelling Units.** The Development Program shall not exceed an aggregate of 289 dwelling units. Notwithstanding any other provision of the Pasadena Municipal Code, residential uses and units shall be permitted on the ground floor.
5. **Setbacks.**
  - a. **Bellevue Drive.** A zero-foot minimum.
  - b. **Arroyo Parkway.** A zero-foot minimum.
  - c. **California Boulevard.** A zero-foot minimum.
  - d. **Interior.** A zero-foot minimum.
6. **Building Height.** Maximum building height shall be as set forth in Table III below. The height of each structure shall be measured from the lowest elevation of the existing grade at an exterior wall of the structure to the highest point of the structure, as defined in Pasadena Municipal Code Section 17.40.060, Height Requirements and Exceptions. Building appurtenances shall comply with Pasadena Municipal Code Section 17.40.060(D).

Table III Maximum Building Height	Maximum Height
Area 1.A	93'6"
Area 1.B	50' (65')
Area 2	50' (65')

7. **Parking.** Every new use, including a change or expansion of a use shall maintain off-street parking in compliance with requirements in Pasadena Municipal Code Chapter 17.46 and Section 17.50.340 as applicable. Notwithstanding these requirements and Table 4-6, required parking for independent living units in a life/care facility shall be the same as required parking for multi-family residential units, and required parking for assisted living units in a life/care facility shall be 0.5 spaces per unit, and one guest parking space for every 10 units (sum of independent and assisted living) shall be required. The following types of parking shall also be allowed:
  - a. **Valet Parking.** Valet parking on private property shall be allowed.
  - b. **Tandem & Triple Stack Parking.** Notwithstanding Pasadena Municipal Code Section 17.46.080, tandem and triple stack parking shall be allowed for all uses. In the event that tandem or triple stack parking is provided for uses other than multi-family residential, independent living units, or commercial uses where the parking spaces are managed by individual building tenants or a third party, a parking attendant shall be

on duty at all times the parking facility is available for tandem or triple stack parking by such uses. Tandem spaces shall be no less than nine feet wide by 34 feet deep. Triple stack spaces shall be no less than nine feet wide by 51 feet deep. Automated parking car lifts shall not be subject to these stall dimensions.

**c. Compact Parking.** Notwithstanding Pasadena Municipal Code Section 17.46.090, compact parking spaces shall be permitted for up to 30 percent of the total provided parking stalls. Compact parking spaces shall be at least 15 feet long and 7 feet 6 inches wide.

**d. Automated Parking.** Automated parking, defined as vehicular storage and retrieval within a parking facility that is accomplished entirely using a mechanical conveyance system and/or computerized parking system to hoist individual vehicles from receiving areas to separate storage areas without requiring an attendant to maneuver a vehicle that is to be parked, shall be permitted for all provided parking. If automated parking is provided, automated parking storage areas may include compact parking spaces.

**8. Residential Open Space.** If residential units are developed in Area 1 per Section D, a minimum of 140 square feet of open or community space per residential dwelling unit shall be required. Private open space shall not exceed 60 percent of the total requirement for community space, notwithstanding Sections 17.50.160 and 17.50.350 or any other section of the Zoning Code.

**9. Design Review.** New construction shall be subject to Design Review as required by Pasadena Municipal Code Section 17.61.030 Design Review.

**10. Public Art.** New construction shall comply with the Public Art Design Standards of Pasadena Municipal Code Section 17.40.100 Public Art Requirements and Design Standards.

**11. Signage.** A master sign plan shall be prepared in accordance with Pasadena Municipal Code Chapter 17.48.



**ATTACHMENT E  
FINAL EIR AND ERRATA**

<https://www.cityofpasadena.net/planning/planned-development-39-affinity-project/>

**ATTACHMENT F**  
**DRAFT FINDINGS OF FACT**

# **Findings of Fact**

## **SCH No. 2021080103**

### **Affinity Project**

Prepared for | City of Pasadena  
Planning and Community Development Department  
175 North Garfield  
Pasadena, California 91101

Prepared by | Psomas  
225 South Lake Avenue, Suite 1000  
Pasadena, California 91101

May 2022

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## SECTION 1.0 INTRODUCTION

### 1.1 REQUIREMENT FOR FINDINGS OF FACT

The California Environmental Quality Act (CEQA) (Section 21002.1 of the California Public Resources Code [PRC]) and the State CEQA Guidelines (Section 15000 et. seq. of Title 14, *California Code of Regulations* [CCR]) require that the Lead Agency analyze and provide findings on a project's environmental impacts before approving that project. If a project will generate significant environmental effects that cannot be avoided or substantially lessened, then before approving the project, the lead agency must provide a statement of overriding considerations documenting that the project's benefits outweigh its unavoidable adverse significant environmental effects.

The City of Pasadena (City) in its capacity as the CEQA Lead Agency, has prepared these Findings of Fact (Findings) to comply with CEQA and the State CEQA Guidelines for the proposed Affinity Project (Project or Project with Building A Residential/Commercial). The determination that the City is the Lead Agency is made in accordance with Section 15051 of the State CEQA Guidelines, which defines the Lead Agency as the public agency that has the principal responsibility for carrying out or approving a proposed project. Regarding the Findings, Section 15091 of the State CEQA Guidelines establishes the following requirements:

- (a) No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:
  - 1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.
  - 2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
  - 3. Specific economic, legal, social, technological, or other considerations, including the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.
- (b) The findings required by subdivision (a) shall be supported by substantial evidence in the record.
- (c) The finding in subdivision (a)(2) shall not be made if the agency making the finding has concurrent jurisdiction with another agency to deal with identified feasible mitigation measures or alternatives. The finding in subdivision (a)(3) shall describe the specific reasons for rejecting identified mitigation measures and project alternatives.
- (d) When making the findings required in subdivision (a)(1), the agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to avoid or substantially lessen significant environmental effects. These measures must be fully enforceable through permit conditions, agreements, or other measures.
- (e) The public agency shall specify the location and custodian of the documents or other material which constitute the record of the proceedings upon which its decision is based.

- (f) A statement made pursuant to Section 15093 does not substitute for the findings required by this section.

The “changes or alterations” under Section 15091(a)(1) that would avoid or substantially lessen a project’s significant environmental effects can include a variety of measures or actions, including but not limited to:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

A Statement of Overriding Considerations states that the decision-making body has balanced the benefits of a project against its unavoidable significant environmental effects and has determined that the benefits of a project outweigh the adverse effects and, therefore, the adverse effects are considered acceptable. Because the Project would not result in any significant and unavoidable impacts, a Statement of Overriding Considerations is not required for the Project.

Having received, reviewed, and considered the Final Environmental Impact Report (Final EIR) for the Affinity Project (State Clearinghouse [SCH] No. 2021080103), as well as all other information in the record of proceedings on this matter, the following Findings are hereby adopted by the City of Pasadena. The Findings set forth the environmental and other bases for current and subsequent discretionary actions to be undertaken by City, as the Lead Agency, and responsible agencies for the implementation of the Project.

## **1.2 PROJECT SUMMARY**

The Project site encompasses approximately 3.3 acres (144,853 square feet [sf]) located between 465 and 577 South Arroyo Parkway, City of Pasadena, Los Angeles County. The site is bound by East Bellevue Drive on the north, South Arroyo Parkway on the east, East California Boulevard on the south, and the Metro Gold (L) Line on the west. Regional access to the site is provided by State Route (SR) 110 located approximately 0.6-mile due south on Arroyo Parkway. Local access is provided by adjacent surface streets and Metro’s Del Mar and Fillmore Stations located approximately 0.2-miles to the north and south, respectively.

The Project Applicant requests approval to rezone the Project site from CD-6 (Central District Specific Plan [CDSP], Arroyo Corridor/Fair Oaks subdistrict), to a Planned Development (PD) zone, and approval of a PD Plan. The Project involves demolition of six (of the nine) existing buildings totaling 45,912 sf, located at 491, 495, 499, 503, 541, and 577 South Arroyo Parkway and construction of two new buildings: (1) a 154,000-sf, 7-story (aboveground) medical office building with ground-floor commercial uses (Building A); and (2) a 184,376-sf, 7-story (aboveground) assisted living building with 85,800 sf of assisted living uses and 98,576 sf of independent living uses including up to 95 one- and two-bedroom senior housing units (Building B). As proposed, there would be five subterranean levels providing up to 850 parking spaces. Approximately 31,605 sf of open space, including public and private (for solely resident and staff use) space would be provided across the Project site.

Alternatively, the proposed PD Plan would provide the flexibility to exchange the uses in Building A from medical office and ground floor commercial for the following:

- 3,000 sf of commercial and a sales/leasing management office on the ground floor;
- Up to 197 residential dwelling units; and
- Up to 650 parking spaces in 4 subterranean levels (one less than the Project).

Although the Project is the choice that is anticipated to be constructed, the flexibility to exchange uses in Building A would enable the Project to respond to the economic needs and demands of the City at the time of Project implementation. The proposed site layout and the aboveground height, mass, and other parameters of the Building A design would remain the same regardless of the scenario constructed, if approved. The PD Plan would define all aspects of site design and provide caps on the types and amounts of allowable land uses, regardless of whether Building A is developed with medical office or residential dwelling units. It is noted that based on the development cap of 87 dwelling units per acre (du/acre), a total of 289 units could be constructed. Therefore, if a total of 197 units were constructed in Building A, only 92 senior housing units could be constructed in Building B. Conversely, if 95 senior housing (i.e., independent living) units were constructed in Building B, only 194 units could be constructed in Building A.

A total of approximately 79,553 sf of the existing development on site would be retained and integrated into the Project, including the Whole Foods grocery store and associated 275-space subterranean parking structure at 465 South Arroyo Parkway and the two historic structures at 501 and 523 South Arroyo Parkway. The Applicant anticipates that restaurant uses would occupy the approximately 5,882 sf of space in the existing buildings to be retained at 501 and 523 South Arroyo Parkway.

A total of five levels of subterranean parking spanning both proposed buildings with up to 850 parking spaces would also be constructed to serve the new development as well as the existing structures at 501 and 523 Arroyo Parkway under the Project. For the Project with Building A Residential/Commercial, a total of four levels of subterranean parking spanning both proposed buildings with up to 650 parking spaces would be constructed. The Project uses south of Whole Foods Grocery would have three ingress/egress points—one on California Boulevard and two on South Arroyo Parkway. Whole Foods Grocery would retain the entrance on East Bellevue Drive and the exit onto South Arroyo Parkway.

### **1.3 FINDING REGARDING CERTIFICATION OF THE EIR**

Pursuant to Section 15090 of the State CEQA Guidelines, the City Council certifies that: (1) it has reviewed and considered the Final EIR prior to approving the project; (2) the Final EIR is an accurate and objective statement that fully complies with CEQA, the State CEQA Guidelines, and the City's local environmental guidelines; and (3) the Final EIR reflects the independent judgement of the City of Pasadena. The City Council certifies the Final EIR based on the findings and conclusions presented herein.

### **1.4 FINDING REGARDING ADOPTION OF MITIGATION MONITORING AND REPORTING PROGRAM**

Pursuant to Section 21081.6 of the PRC, the City Council hereby adopts the Mitigation Monitoring and Reporting Program (MMRP) attached to this Resolution as Attachment 1, and incorporated herein. This MMRP includes all of the mitigation measures analyzed in the Draft EIR, inclusive of any clarifications or revisions associated with the Reponse to Comments on the Draft EIR, which



are applicable to the Project, Project with Building A Residential/Commercial, and Alternatives 2 through 4.

### **1.5 FINDING REGARDING CUSTODIAN OF RECORDS**

The documents and materials that constitute the record of proceedings on which these findings are based are located at the City of Pasadena, Planning and Community Development Department, 175 North Garfield Avenue, Pasadena, California 91101 and with the Director of Planning and Community Development, who serves as the custodian of these records.

## **SECTION 2.0 FINDINGS REGARDING ENVIRONMENTAL ISSUES NOT ANALYZED IN THE EIR**

The City Council hereby finds that the following environmental issues were found to have no impacts or less than significant impacts in the Initial Study (see Appendix A-1 of the Draft EIR), did not require the imposition of mitigation measures, and therefore did not require analyses in the Draft EIR:

- Aesthetics;
- Agricultural and Forestry Resources;
- Air Quality (Odors);
- Biological Resources;
- Cultural Resources (Human Remains);
- Geology and Soils;
- Hazards and Hazardous Materials (Accidental Release of Hazardous Materials, Location Near Airport, Emergency Response/Evacuation Plan, Wildfire);
- Hydrology and Water Quality;
- Land Use and Planning (Dividing a Community);
- Mineral Resources;
- Noise (Location Near Airport);
- Population and Housing; and
- Wildfire.

## **SECTION 3.0 FINDINGS REGARDING IMPACTS DETERMINED TO BE LESS THAN SIGNIFICANT WITHOUT MITIGATION**

Consistent with Section 21002.1 of the PRC and Section 15128 of the State CEQA Guidelines, the Final EIR focused its analysis on topics with potentially significant impacts, and limited discussion of other topics with no potential for significant adverse environmental impacts. For each environmental topic within this category, the discussion below includes: (1) a listing of the environmental topics evaluated in the Draft EIR for which there would be no impact or a less than significant impact without mitigation and the Draft EIR page citations where the relevant discussion begins, (2) indication that no mitigation measures (MMs) are required, (3) findings pursuant to Section 15091 of the State CEQA Guidelines for that topic, and (4) explanation of the substantial evidence in support of the Draft EIR conclusion that there would be no impact or a less than significant impact related to the identified topics (i.e., thresholds).

Section 15091 of the State CEQA Guidelines does not require specific findings to address environmental effects that an EIR identifies as “no impact” or a “less than significant” impact. Nonetheless, the City Council hereby finds that the Project and Project with Building A Residential/Commercial would have either no impact or a less than significant impact pertaining to the following resource areas and environmental checklist questions.

### **3.1 AIR QUALITY (SECTION 3.1 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project conflict with or obstruct implementation of the applicable air quality plan? (Draft EIR, p. 3.1-14)
- Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state ambient air quality standard? (Draft EIR, p. 3.1-16)
- Would the project expose sensitive receptors to substantial pollutant concentrations? (Draft EIR, p. 3.1-24)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to air quality. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

#### **Supporting Explanation**

##### ***Project and Project with Building A Residential/Commercial***

Construction and operation of the Project and Project with Building A Residential/Commercial would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is in non-attainment under applicable federal or State Ambient Air Quality Standards (AAQS) (refer to Tables 3.1-6 through 3.1-13 and associated analysis on pages 3.1-17 through

3.1-24 of the Draft EIR). There would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.1-15 through 3.1-24)

Accordingly, the Project and Project with Building A Residential/Commercial would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emissions reductions in the South Coast Air Quality Management District's (SCAQMD's) *2016 Air Quality Management Plan* (AQMP). Therefore, neither the Project nor Project with Building A Residential/Commercial would conflict with AQMP first criterion of AQMP consistency. Regarding the second criterion, the Project site is within both a High-Quality Transit Area (HQTa) and Transit Priority Area (TPA). The Project site is suitably located to encourage the use of public transit and active transportation modes for the residences, employees, and visitors to the Project site. Positioning a mix-use development, under either scenario, in proximity of the L Line and bus lines would encourage the use of mass transit which is consistent with the AQMP's goal of using non-single occupancy vehicles. Additionally, the Project and Project with Building A Residential/Commercial would be consistent with the existing General Plan designation for the site of High Mixed-Use; as such, the Project and Project with Building A Residential/Commercial would not exceed the anticipated growth accounted for within the Land Use Element of the City's General Plan, which helped formed the basis of the AQMP. Therefore, the Project and Project with Building A Residential/Commercial would not result in a conflict with or obstruct implementation of the applicable air quality plan—SCAQMD's 2016 AQMP. There would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.1-13 through 3.1-15)

Exposure of sensitive receptors was addressed for emissions from construction and operation of the Project and Project with Building A Residential/Commercial. To address construction activities, the analysis below addresses the following issues: localized air quality impacts; and toxic air contaminants (TACs), specifically diesel particulate matter (DPM) from on-site construction. To address operational emissions, the analysis evaluates potential exposure to sensitive receptors, the analysis below discusses local air quality impacts from on-site operations, and carbon monoxide (CO) hotspots. The proposed residential and commercial uses do not generate substantial quantities of TACs and are therefore not addressed in the Draft EIR. Localized impacts from construction and operation were found to be less than the applicable SCAQMD localized significance thresholds (LST) screening thresholds (see Tables 3.1-7, 3.1-9, 3.1-11, and 3.1-13 and associated analysis on pages 3.1-18 through 3.1-24 of the Draft EIR). Regarding TACs (DPM), there would be relatively few pieces of off-road, heavy-duty diesel equipment in operation, and the total construction period of approximately 34 months would be relatively short when compared to a 40-year exposure period, consistent with Office of Environmental Health Hazard Assessment methodology. Combined with the highly dispersive properties of DPM and additional reductions in particulate emissions from newer construction equipment, as required by federal and State regulations, construction emissions of TACs for both the Project and Project with Building A Residential/Commercial were determined not to represent a substantial exposure to sensitive receptors. In an urban setting, vehicle exhaust is the primary source of CO. Localized areas where ambient concentrations exceed federal and/or State standards for CO are termed CO "hotspots". If impacts are less than significant close to congested intersections (as measured by level of service [LOS]), impacts also would be less than significant at more distant sensitive receptor locations. Based on data in the Transportation Impact Analysis – Outside of CEQA Analysis prepared for Project and Project with Building A Residential/Commercial, based on PM peak hour traffic volumes average daily traffic at the Arroyo Parkway/California Street intersection under Existing Plus Project conditions is conservatively estimated at 48,000 vehicles for the Project and a conservatively estimated 45,000 vehicles for the Project with Building A Residential/Commercial. The 48,000 or 45,000 daily trips at this intersection is substantially less than the 400,000 vehicles per day needed to exceed the CO

standards. Therefore, CO concentrations at the intersection would be substantially less than the CO ambient air quality standards. There would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.1-24 through 3.1-27)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Consistency with the SCAQMD's AQMP is not subject to cumulative impact analysis. However, cumulative construction and operational impacts were analyzed and found to be less than significant, as discussed above. SCAQMD's policy with respect to cumulative impacts—impacts that would be directly less than significant on a project level would also be cumulatively less than significant—is applicable to the TAC analysis. Direct TAC impacts would be less than significant; therefore, cumulative TAC impacts would be less than significant for the Project. With respect to CO hotspot impacts, although cumulative traffic is not expressly addressed in the Transportation Impact Analysis – Outside of CEQA Analysis reports, the Existing Plus Project traffic volume at the Arroyo Parkway/California Street intersection (which has the worst LOS) is substantially below the level of concern such that cumulative traffic could not approach the level of significance. There would be no cumulatively considerable impacts with implementation of the Project or Project with Building A Residential/Commercial, and no mitigation is required. (Draft EIR, p. 3.1-27 through 3.1-29)

## **3.2 CULTURAL AND PALEONTOLOGICAL RESOURCES (SECTION 3.2 OF THE EIR)**

### **Potential Impacts Evaluated**

- Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Draft EIR, p. 3.2-14)

### **Proposed Mitigation**

None required.

### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to paleontological resources. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

### **Supporting Explanation**

#### ***Project and Project with Building A Residential/Commercial***

No unique geologic features are known to exist, and no fossils have been documented on the Project site. The Project would involve excavation for five subterranean parking levels spanning both proposed buildings; the Project with Building A Residential/Commercial would have one less level of subterranean parking. The City's General Plan EIR states that grading and excavations deeper than six feet into the Topanga Formation have the potential to impact significant fossils. However, neither the Project nor Project with Building A Residential/Commercial would involve excavation in the Topanga Formation. There would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.2-12 through 3.2-15)

## ***Cumulative Impacts***

### **Project and Project with Building A Residential/Commercial**

Although cultural resources (which includes paleontological resources) are site-specific regarding any given resource, impacts may be considered cumulative simply because they relate to the loss of cultural resources in general over time throughout the region. Regarding paleontological resources, the Project site is not located in the portions of the City considered to be paleontologically sensitive. Therefore, the Project would not result in a cumulatively considerable impact to paleontological resources. (Draft EIR, p. 3.2-15 through 3.2-16)

## **3.3 ENERGY (SECTION 3.3 OF THE EIR)**

### **Potential Impacts Evaluated**

- Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Draft EIR, p. 3.3-4)
- Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Draft EIR, p. 3.3-7)

### **Proposed Mitigation**

None required.

### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to energy. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

### **Supporting Explanation**

#### ***Project and Project with Building A Residential/Commercial***

Construction and operation of the Project and Project with Building A Residential/Commercial would require the use of energy (refer to Tables 3.3-1 through 3.3-4 on pages 3.3-4 through 3.3-7 of the Draft EIR). During construction, transportation energy would be used for the transport and use of construction equipment, from delivery vehicles and haul trucks, and from construction employee vehicles that would use gasoline and/or diesel fuel. Fuel energy consumed during construction would also be temporary in nature, and there are no unusual Project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the region or State. Further, short-term energy usage for construction would result in long-term energy savings from newly constructed buildings that are compliant with the current State energy efficiency requirements.

Strategies and measures for increased energy efficiency have been implemented at the State level with California's Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings and the CALGreen Code. The Project and Project with Building A Residential/Commercial would be more energy-efficient than the existing buildings in the vicinity

of the site, including the buildings to be demolished. The CALGreen Code requires the development of electric vehicle charging infrastructure to promote and support alternatively fueled vehicles and bicycling. The Project and Project with Building A Residential/Commercial would also be consistent with the City's Green City Action Plan, by increasing energy efficiency for buildings, developing higher density, mixed-use, walkable, bikeable, and disabled-accessible neighborhoods which coordinate land use and transportation. Also, the Project site is within both HQTa and TPA; the proposed land uses near transit support alternative transportation modes.

Construction and operation of the Project and Project with Building A Residential/Commercial would not result in wasteful, inefficient, or unnecessary construction of energy resources, nor conflict with or obstruct the applicable State or local plans for renewable energy and energy efficiency. There would be a less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.3-4 through 3.3-8)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

The geographic area for consideration of cumulative impacts is the City. Future development throughout the City would generate additional energy demand and construction and operational fuel energy demand. Future development projects in the City would also need to comply with all applicable local and State energy efficiency and renewable energy regulations. The electrification of the transportation sector is anticipated throughout California and would contribute to reduced fuel energy use related to future development throughout the City. Also, regional (i.e., Southern California Association of Governments [SCAG]) planning documents support a denser land use pattern with a focus on proximity to transit. Therefore, neither the Project nor Project with Building A Residential/Commercial would result in a cumulatively considerable impact related to energy. (Draft EIR, p. 3.3-8)

### **3.4 GREENHOUSE GAS EMISSIONS (SECTION 3.4 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Draft EIR, p. 3.4-14)
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas emissions? (Draft EIR, p. 3.4-19)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to greenhouse gas emissions. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

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## **Supporting Explanation**

### ***Project and Project with Building A Residential/Commercial***

Construction and operation of the Project and Project with Building A Residential/Commercial would result in greenhouse gas (GHG) emissions. The principal source of construction-related GHG emissions would be from internal combustion engines of construction equipment, on-road construction vehicles, and workers' commuting vehicles. Operational emissions are comprised of area, energy, mobile, stationary source, waste, and water emissions. Operational GHG emissions would come primarily from energy; other sources include mobile trips; water consumption; natural gas for space and water heating; and gasoline-powered landscaping and maintenance equipment.

The *Climate Action Plan* (CAP), adopted by the City in March 2018, is a long-range planning document that guides the City towards long-term emissions reductions in accordance with State of California goals. The CAP Checklist is a tool for new development projects to demonstrate consistency with the CAP, as a qualified GHG reduction plan in accordance with Section 15183.5 of the State CEQA Guidelines. The Option B GHG efficiency metric of the City's CAP was used for this analysis. Per the City's CAP, this method recognizes that highly efficient projects (e.g., compact and mixed-use development) with relatively high mass emissions may nevertheless meet the local and State GHG reduction goals/targets. Using the demographic projections developed for the CAP, the City has developed service person efficiency thresholds for the years of 2020, 2025, 2030 and 2035 which are consistent with Pasadena's GHG emission goals included in the CAP and the State targets it is designed to achieve (AB 32, SB 32, and substantial progress towards EO S-3-05). Neither the Project's GHG efficiency metric of 3.52 metric tons of carbon dioxide equivalent per service person (MTCO<sub>2</sub>e/SP) nor the Project with Building A Residential/Commercial's GHG efficiency metric of 2.15 MTCO<sub>2</sub>e/SP would exceed the City's CAP GHG efficiency threshold of 3.57 MTCO<sub>2</sub>e/SP for 2026 (refer to Tables 3.4-6 and 3.4-9 on pages 3.4-16 and 3.4-19 of the Draft EIR).

To provide further substantiation that the Project and Project with Building A Residential/Commercial would be consistent with State plans, policies, and regulations, consistency with the SCAG 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) *Connect SoCal*, CARB's California's Climate Change Scoping Plan (Scoping Plan), and Statewide GHG reduction goals for 2030 or 2050 was addressed in the Draft EIR. The Project and Project with Building A Residential/Commercial were determined not to conflict with SCAG's *Connect SoCal* plan and not to impede the State's trajectory toward Statewide GHG reduction goals for 2030 or 2050. The Project and Project with Building A Residential/Commercial would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and would not conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing GHG emissions. There would be a less than significant impact, and no mitigation is required. (Draft EIR, p. 3.4-14 through 3.4-22)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Because the magnitude of global GHG emissions is extremely large when compared with the emissions of typical development projects, it is accepted as very unlikely that any individual development project would have GHG emissions of a magnitude to directly impact global climate change. Therefore, the analysis summarized above represents the cumulative impact analysis of



GHG emissions. As discussed, there would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.4-22)

### **3.5 HAZARDS AND HAZARDOUS MATERIALS /WILDFIRE (SECTION 3.5 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (Draft EIR, p. 3.5-10)
- Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter-mile of an existing or proposed school? (Draft EIR, p. 3.5-11)
- Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (Draft EIR, p. 3.5-12)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to hazards and hazardous materials. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

#### **Supporting Explanation**

##### ***Project and Project with Building A Residential/Commercial***

The Project site is not on the State of California Hazardous Waste and Substances Sites List of sites published by California Environmental Protection Agency (CalEPA) and compiled pursuant to Section 65962.5 of the *California Government Code* (referred to as the Cortese List). Further, there are no conditions present on the site due to current or historic land uses such that excavation activities would be expected to encounter on-site contamination. Compliance with SCAQMD Rule 1403 and the California Division of Occupational Safety and Health's (CalOSHA's) Title 8 regulations on asbestos and lead abatement would be a condition of approval and would ensure that handling and disposal of these materials is conducted safely, and accident conditions during demolition activities would not be reasonably foreseeable. Handling and transport of hazardous materials, that would represent a significant hazard to construction workers, the public, or the environment, is not anticipated.

Operation of medical and medical-related facilities, such as the medical offices in Building A and/or assisted living facilities in Building B, would involve the routine transport, use, and disposal of hazardous materials (e.g., pharmaceutical products, medical gases, radioisotopes and x-ray producing machines, cleaners, solvents, medical and biological wastes). Health care facilities in California are licensed, regulated, inspected, and/or certified by several public and private agencies at the State and federal levels. All hazardous materials and/or wastes associated with the Project and Project with Building A Residential/Commercial, including those related to proposed commercial uses and the presence of diesel emergency generators, would be managed

and disposed in compliance with local, regional, State, and federal regulations. Thus, the Project and Project with Building A Residential/Commercial would not result in a significant hazard to the public or the environment related to the routine transport, use, disposal, and storage of hazardous materials. Construction and operation of the Project would not adversely affect schools in the vicinity through compliance with applicable regulations. There would be a less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.5-10 through 3.5-13)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Existing developments in the City, including health care facilities, pose risks to public health and safety with respect to the use, storage, handling, generation, transport, and disposal of hazardous materials. Future developments throughout the City would increase these risks as more facilities or operations may utilize hazardous materials or may be located on the Cortese list or other hazardous materials databases. Regulations for a variety of activities and uses to protect public health and safety exist at all levels of government. Compliance of individual projects, including the Project and Project with Building A Residential/Commercial, with pertinent regulations would preserve public health and safety and would prevent hazards to existing and future developments. Therefore, the Project's and Project with Building A Residential/Commercial's contribution to cumulative impacts would be less than significant, and no mitigation is required. (Draft EIR, p. 3.5- through 3.5-13)

### **3.6 LAND USE AND PLANNING (SECTION 3.6 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the proposed project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (Draft EIR, p. 3.6-6)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to land use and planning. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

#### **Supporting Explanation**

##### ***Project and Project with Building A Residential/Commercial***

The Project would not require a General Plan amendment and would be consistent with the Guiding Principles of the City's General Plan Land Use Element and numerous goals and policies related to avoiding or reducing environmental impacts. The primary land use planning documents that govern the Project site are the City's General Plan, Central District Specific Plan (CDSP), and the City's zoning code. Additionally, the 2020–2045 RTP/SCS is prepared, in part, based on data from cities and counties related to their respective general plans, land uses, and expected

demographic growth. The Project would redevelop an underutilized site with transit and pedestrian accessibility with multi-story buildings that provide complementary commercial, assisted living, and medical office uses (or the Project with Building A Residential/Commercial that provide complementary commercial, assisted living, and residential uses) while integrating two historic structures. (Draft EIR, p. 3.6-13 and p. 3.6-22)

The City's General Plan includes goals and policies that have the purpose of avoiding or mitigating an environmental effect; for the City of Pasadena, these include historic resources and GHG emissions/sustainability. (Draft EIR, p. 3.6-10 and p. 3.6-19)

Consistent with Goal 8 and Policy 8.1, 8.4, and 8.5 of the General Plan, a historic resources variance is being sought by the Applicant to preserve and adaptively reuse two previously recorded historic structures on the site (501 and 523 South Arroyo Parkway). Specifically, the Applicant is requesting an increase in allowable building height to offset the reduction in developable area due to preserving the two historic structures. This variance is being considered consistent with the General Plan as well as the City's historic preservation program, which promotes the identification, evaluation, rehabilitation, adaptive use, and restoration of historic structures. Additionally, mitigation measures have been identified to protect the on-site historic structures during construction activities and ensure there are no significant impacts to historic resources, consistent with the General Plan. (Draft EIR, p. 3.6-13 and 3.6-19 through -20)

Consistent with Goal 10 and Policy 10.1, 10.4, and 10.6 of the General Plan, as concluded in Section 3.4, GHG Emissions, of the Draft EIR, the Project and Project with Building A Residential/Commercial would be consistent with the City's Climate Action Plan (CAP), SCAG's 2020–2045 RTP/SCS *Connect SoCal*, the California Air Resources Board (CARB), California's Climate Change Scoping Plan (Scoping Plan), and Statewide GHG reduction goals for 2030 or 2050 identified in Executive Order (EO) S-3-05 and Senate Bill (SB) 32. As concluded in Section 3.3, Energy, of the Draft EIR, construction and operation of the Project and Project with Building A Residential/Commercial would not result in wasteful, inefficient, or unnecessary use of energy resources, nor conflict with or obstruct the applicable State or local plans for renewable energy and energy efficiency. Based on these analyses, it can be concluded that the Project would not conflict with applicable goals and policies related to GHG emissions and sustainability as it relates to energy efficiency. (Draft EIR, p. 3.6-11 and 3.6-20)

The City's General Plan land use designation for the site is High Mixed-Use, which allows maximum densities of 3.0 floor area ratio (FAR) and 87 dwelling units per acre (du/acre). Based on the site area (144,853 sf), the site would allow up to 434,559 sf of floor area and up to 289 dwelling units. Development of the Project would result in a total of 417,929<sup>1</sup> sf of floor area (aboveground), which would include up to 95 senior housing units. Development of the Project with Building A Residential/Commercial would also result in a total of 417,929 sf of floor area (aboveground) but would include 289 dwelling units balanced between market rate apartments/condominiums in Building A and independent senior living units in Building B. The Project and Project with Building A Residential/Commercial would not require a General Plan amendment. Both the Project and Project with Building A Residential/Commercial were determined to be consistent with the General Plan Land Use Element's Guiding Principles and goals and policies whose purpose is avoiding or mitigating an environmental effect.

The Project and Project with Building A Residential/Commercial would establish a PD zoning district (via a Zone Change from CD-6 to PD-39) for the site and would require adoption of a PD

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<sup>1</sup> Of this, a total of 338,376 sf would be new development in Buildings A and B.

Plan. The regulations and standards that dictate allowed and conditionally allowed land uses and development would be prescribed in the accompanying PD Plan. The basic design of a project, including compatibility with surroundings, massing, proportion, siting, solid-to-void relationships, and compliance with applicable design guidelines is evaluated through the City's Design Review process and is a role for the City's Design Commission. A subsequent review of a proposed PD zone and PD Plan would occur at a public hearing by the Planning Commission. Therefore, with adherence to the PD Plan processes, including consideration of a variance for historic resources to increase the height of the proposed buildings, the Project would be considered consistent with the zoning code. The Project and Project with Building A Residential/Commercial would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. There would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.6-6 through 3.6-24)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

The cumulative impacts related to demographic growth are analyzed for the City of Pasadena. Growth and development in the City would be accompanied by potential changes in existing land uses. All future projects requiring General Plan amendments or zone changes/variances would need to show consistency with the applicable goals, policies, and/or actions in the General Plan and/or Zoning Code, respectively, and thus are not expected to lead to land use incompatibilities or conflicts. Planned or required infrastructure and public facilities associated with individual projects would provide the necessary facilities and services to existing and future developments. Thus, these projects would complement the private development projects planned in the City. The Project and Project with Building A Residential/Commercial would not result in a cumulatively considerable impacts, and no mitigation is required. (Draft EIR, p. 3.6-25)

### **3.7 NOISE (SECTION 3.7 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project result in the generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies? (Draft EIR, p. 3.7-11)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to noise. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

## **Supporting Explanation**

### ***Project and Project with Building A Residential/Commercial***

Construction of the Project and Project with Building A Residential/Commercial would generate noise from demolition, site preparation, grading/excavation, building construction and architectural coating activities. Noise levels for the Project's construction phase would be based on a typical construction equipment mix for a mixed-use project and do not include use of atypical, very loud, and vibration-intensive equipment (e.g., pile drivers). The Draft EIR determined that noise levels from construction activities at the nearest noise sensitive use/receptor would be less than the City's noise limit of 85 dBA as measured at 100 feet, and would be lower than 85 dBA for almost all receptors and/or all construction phases (refer to Table 3.7-4 page 3.7-12 of the Draft EIR). Noise from construction activities on-site would be clearly audible above the existing ambient noise environment. However, construction would occur during the least noise-sensitive portions of the day, and it would not exceed the City's construction noise limit of 85 dBA at 100 feet. Additionally, off-site noise from the addition of construction-related truck trips would not be discernable.

Operation of the Project and Project with Building A Residential/Commercial would increase traffic compared to the existing uses on the site, which has the potential to increase noise levels on local roadways proximate to the site. The Project would result in a greater increase in net average daily trips (ADT) than the Project with Building A Residential/Commercial and would result between 0 percent and 19 percent increase in ADT (refer to Table 3.7-6 on page 3.7-14 of the Draft EIR). A 3-decibel increase occurs when traffic volumes double or a project increases the percentage of noisy trucks on roadways. With a maximum increase of 19 percent, the increase in off-site traffic-related noise would be less than 1 decibel. This increment is not discernable to human hearing even under laboratory conditions. On-site operational noise sources associated with the Project would include, but not limited to, mechanical equipment (e.g., HVAC units), landscape maintenance equipment, and noise generated by outdoor open spaces and dining. The Project would be required to comply with City of Pasadena noise ordinances Sections 9.36.090 and 9.36.050. In summary, construction and operation of the Project and Project with Building A Residential/Commercial would not result in a substantial temporary or permanent change in ambient noise levels. There would be less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.7-10 through 3.7-16)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Noise generated during construction of the Project and Project with Building A Residential/Commercial would be localized and would occur intermittently for varying periods of time throughout the construction period. Noise generated by construction of the Project or Project with Building A Residential/Commercial in combination with another project with major construction activity within approximately 1,000 feet of the site could adversely impact sensitive receptors in the vicinity of the site with a cumulative noise level greater than the noise generated solely at the Project site. At the time of preparation of the Draft EIR, there were no projects within 1,000 feet that were anticipated to be constructed concurrently with the Project or Project with Building A Residential/Commercial that would have the potential to generate cumulatively considerable noise or vibration levels. The City also limits noise from construction equipment to 85 dBA at 100 feet. Because construction noise would be substantially attenuated prior to reaching land uses proximate to the site and imposes a noise limit on construction equipment,

cumulative noise from proximate construction projects, if applicable, would not be substantially different than that generated by the Project or Project with Building A Residential/Commercial.

Cumulative traffic noise was evaluated by the City's General Plan EIR, in which buildout traffic noise levels along Arroyo Parkway north of California Boulevard were found to increase by 0.5 dBA. The Project or Project with Building A Residential/Commercial would not result in increases in cumulative traffic noise above the 5 dBA CNEL significance threshold used in the General Plan EIR. Individual stationary sources of noise are regulated by the City's Municipal Code for both the Project and the Project with Building A Residential/Commercial as well as any future projects in the vicinity. The stringent noise limitations established for each of these noise sources, the infrequency of occurrence, and the separation distance for these noise sources would limit cumulative noise exposure near the Project site to a less than significant level. As such, construction and operation of the Project or Project with Building A Residential/Commercial would not result in a cumulatively considerable noise impact, and no mitigation is required. (Draft EIR, p. 3.7-19 through 3.7-20)

### **3.8 PUBLIC SERVICES AND RECREATION (SECTION 3.8 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
  - Fire protection; (Draft EIR, p. 3.8-10)
  - Police protection; (Draft EIR, p. 3.8-11)
  - Schools; (Draft EIR, p. 3.8-12)
  - Parks; or (Draft EIR, p. 3.8-13)
  - Other public facilities? (Draft EIR, p. 3.8-12)
- Would the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (Draft EIR, p. 3.8-13)
- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (Draft EIR, p. 3.8-13)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to public services and recreation. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

## **Supporting Explanation**

### ***Project and Project with Building A Residential/Commercial***

#### **Fire Protection and Emergency Medical Services**

The Pasadena Fire Department (PFD) anticipates that the Project and Project with Building A Residential/Commercial would result in an increased call for fire protection and emergency medical services because there would be larger development on the site than the existing conditions; however, the increase would not result in the need to construct new or expanded facilities whose construction may cause an environmental impact. Further, the Project or Project with Building A Residential would comply with the California Fire Code, regulations related to fire protection, and be subject to the City's routine construction permitting process. This includes a review by PFD for compliance with building and site design standards related to fire life safety and coordinating with Pasadena Water and Power (PWP) to ensure that local fire flow infrastructure meets current code standards for the type and intensity of land uses involved. The Project and Project with Building A Residential/Commercial would generate revenues towards the City's general fund (e.g., property taxes, sales tax, business tax) that could potentially be applied toward the funding of PFD fire protection and emergency services. There would be less than significant impacts related to the need for new or expanded PFD facilities, and no mitigation is required. (Draft EIR p. 3.8-10 through 3.8-11 and p. 3.8-14 through 3.8-15)

#### **Police Protection Services**

The Pasadena Police Department (PPD) anticipates that the Project and Project with Building A Residential/Commercial would result in an increase in calls for service in and around the site, primarily due to traffic (i.e., traffic stops, accidents), potential theft on the premises and in vehicles, and disturbances related to unhoused individuals. PPD states that whenever additional businesses and/or residents move into an area, there is a presumption that calls for service increase. Further, the Project and Project with Building A Residential/Commercial would be reviewed by the PPD and be required to comply with any requirements in effect when the review is conducted. The Project and Project with Building A Residential/Commercial would generate revenues towards the City's general fund (e.g., property taxes, sales tax, business tax) that could potentially be applied toward the funding of PPD police protection services. These revenues would help offset the increased demand for PPD services with buildout of the General Plan. Construction and operation of new or expanded facilities, if necessary, as an allowed land use were evaluated throughout the General Plan EIR. However, the PPD does not indicate the Project and Project with Building A Residential/Commercial would result in the need to construct new or expanded facilities that may cause an environmental impact. There would be less than significant impacts related to the need for new or expanded PPD facilities, and no mitigation is required. (Draft EIR, p. 3.8-11 and p. 3.8-15)

#### **Schools**

The Project would not generate school-age children that would utilize Pasadena Unified School District (PUSD) schools or programs, as the only dwelling units proposed are for senior-age persons. As allowed under the SB 50, school districts serving the City can assess school impact fees based on the floor area of new dwelling units and non-residential developments. The Project with Building A Residential/Commercial would generate school-age children and would be required to remit SB 50 fees. These fees, to be remitted prior to issuance of building permits, are used to fund school services and facilities needed to provide the necessary school services. There would be no impact associated with the Project and a less than significant impact associated with

the Project with Building A Residential/Commercial, and no mitigation is required. (Draft EIR, p. 3.8-12)

#### Other Public Facilities (Libraries)

While the Project and Project with Building A Residential/Commercial would result in an increase in the population being served by the Pasadena Public Library (PPL), their total collection exceeded national per capita standards at the time the General Plan EIR was prepared. As such, the PPL concluded that the Project's and Project with Building A Residential/Commercial's population would be adequately served by the existing facilities and related collections and would not result in the need to construct new or expanded PPL facilities that may cause an environmental impact. There would be a less than significant impact, and no mitigation is required. (Draft EIR, p. 3.8-12)

#### Parks and Recreation Services

The City's Parks, Recreation, and Community Services Department does not have a minimum service ratio for parks. However, based on the existing parkland with a 0.7-mile radius of the site and proposed private and public open space proposed as part of the Project and Project with Building A Residential/Commercial, the Parks, Recreation, and Community Services Department concluded that the increase in population associated with the Project and Project with Building A Residential/Commercial would not result in the need for new or expanded off-site park facilities that may cause an environmental impact. Additionally, the Parks, Recreation, and Community Services Department concluded that the Project or Project with Building A Residential/Commercial would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated through payment of a park impact fee (Section 4.17 of the Pasadena Municipal Code [PMC]) whose purpose is to offset increased demand for parks and impact on existing parks. There would be a less than significant impact, and no mitigation is required. (Draft EIR, p. 3.8-13 through 3.8-14)

### ***Cumulative Impacts***

#### Project and Project with Building A Residential/Commercial

For PFD, PPD, PPL, and parks services, the service area for consideration of cumulative impacts is the City. For PUSD, the geographic area for consideration of cumulative impacts is the PUSD service area, which includes the City and some adjacent areas. The PFD and PPD have mutual aid agreements with other fire protection and police agencies in the surrounding region. Individual developments in the City would be reviewed by the PFD and PPD and required to comply with any requirements in effect when the review is conducted. Future development in the City would generate revenues towards the City's general fund (e.g., property taxes, sales tax, business tax) that could potentially be applied toward the funding of PFD and PPD facilities. These revenues would help offset the increased demand for PFD and PPD services with buildout of the General Plan. Construction and operation of new or expanded facilities, if necessary, as an allowed land use were evaluated throughout the General Plan EIR.

The General Plan EIR states that the existing library system (in 2015) and PUSD would have adequate resources to serve the anticipated population increase, including student population, with General Plan buildout. PUSD determined that there would be excess classroom capacity for all grade levels. Individual developments in the City would be required to pay SB 50 fees as appropriate at the time that project is implemented. Additionally, PUSD can utilize Measure TT



funds. As discussed in the Initial Study, the development of the Project or the Project with Building A Residential/Commercial would be within the remaining development capacity of the General Plan for the CDSP.

Individual developments in the City would be required to pay the residential impact fee consistent with the park impact fee nexus study prepared in 2013 and updated every five years. Compliance with the residential impact fee program ensures that there is adequate parkland based on General Plan standards, and that there would not be substantial deterioration of existing facilities. In addition to City of Pasadena, the surrounding cities, County of Los Angeles, and National Forest Service have policies and programs to maintain and/or develop regional recreation facilities to meet increased demand. It is not expected that there would be regional growth, without some parallel growth of recreation facilities, such that the existing facilities would experience substantial physical deterioration.

Therefore, the Project and Project with Building A Residential/Commercial would not result in a cumulatively considerable impact to fire protection and emergency medical services, police protection, schools, libraries, and parks and recreation facilities, and no mitigation is required. (Draft EIR, p. 3.8-14 through p. 3.8-16)

### **3.9 TRANSPORTATION (SECTION 3.9 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (Draft EIR, p. 3.9-9)
- Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)(1)? (Draft EIR, p. 3.9-9)
- Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Draft EIR, p. 3.9-11)
- Would the project result in inadequate emergency access? (Draft EIR, p. 3.9-12)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to transportation. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

#### **Supporting Explanation**

##### ***Project and Project with Building A Residential/Commercial***

The City of Pasadena *Transportation Impact Analysis Current Practice and Guidelines* (TIA Guidelines) address two vehicular performance metrics: Vehicle Miles Traveled (VMT) per Capita and Vehicle Trips (VT) per Capita. The City's TIA methodology assesses both the vehicular and

non-vehicular (i.e., transit, bicycle, pedestrian) transportation facilities together with a total of five transportation performance measures (see Table 3.9-4 on page 3.9-7 of the Draft EIR). Proposed projects are analyzed using the City's calibrated travel demand forecasting (TDF) model built on SCAG's regional model.

Compared to the Project, the Project with Building A Residential/Commercial would have substantively lower VMT per Capita and somewhat lower VT per Capita. The Pasadena Department of Transportation (DOT) determined that neither the Project nor Project with Building A Residential/Commercial would exceed any of the CEQA transportation thresholds defined in the City's TIA Guidelines. As such, the Project and Project with Building A Residential/Commercial would not conflict with the City's plan addressing the circulation system under CEQA (i.e., TIA Guidelines), which includes transit, roadway, bicycle and pedestrian facilities; or conflict or be inconsistent with Section 15064.3(b)(1) of the State CEQA Guidelines.

The Pasadena DOT was consulted regarding the collision history for the South Arroyo Parkway and California Boulevard intersection. While collisions have occurred at this intersection, it is not considered a high collision location, and Pasadena DOT continues to monitor operations at this intersection and along the corridor to address traffic signal operations and reduce the potential for collisions. The Pasadena DOT concluded that the additional trips generated by the Project, on its own, are not expected to generate a safety concern at this intersection. Moreover, the Project would not increase hazards due to a geometric design feature or incompatible use. No sharp curves or dangerous intersections are proposed, and the proposed uses are consistent and compatible with the existing uses onsite and in the vicinity. Implementation of the Project or Project with Building A Residential/Commercial would not create new obstructions to emergency access in the Project area. There would be a less than significant impacts, and no mitigation is required. (Draft EIR, p. 3.9-9 through 3.9-12)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Cumulative transportation impacts within the City were recently evaluated in the City's General Plan EIR, which evaluated transportation impacts within the City associated with buildout of the General Plan in 2035. The General Plan EIR analysis considered impacts associated with the five transportation performance measures identified in the TIA Guidelines. The analysis found that transportation impacts associated with all five performance measures from buildout of the General Plan would be less than significant. As the Project and Project with Building A Residential/Commercial are consistent with the land use designation associated with the site that was evaluated in the General Plan EIR, the analysis of transportation impacts in the General Plan EIR is representative of cumulative impacts associated with the Project and Project with Building A Residential/Commercial. Also, as discussed above, the Project and Project with Building A Residential/Commercial would result in less than significant impacts for all five transportation performance measures. The Project and Project with Building A Residential/Commercial would not result in a cumulatively considerable impact related to transportation, and no mitigation is required. (Draft EIR, p. 3.9-13)

### **3.10 TRIBAL CULTURAL RESOURCES (SECTION 3.10 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). (Draft EIR, p. 3.10-3)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to tribal cultural resources. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

#### **Supporting Explanation**

##### ***Project and Project with Building A Residential/Commercial***

Based the results on an archaeological records search conducted by the South Central Coastal Information Center (SCCIC) on July 24, 2020 and Native American Heritage Commission (NAHC) Sacred Lands File search received on July 15, 2020, there are no tribal cultural resources listed on the California Register of Historical Resources (CRHR) or a local register within the Project site or otherwise known to the culturally affiliated Native American tribes. There would be no impact related to documented tribal cultural resources, and no mitigation is required. (Draft EIR, p. 3.10-3 through 3.10-4).

##### ***Cumulative Impacts***

##### **Project and Project with Building A Residential/Commercial**

Direct impacts to cultural resources are generally site specific. However, development throughout the City could potentially result in the disturbance of prehistoric archaeological resource sites (including tribal cultural resources/Native American remains). Because there are no documented tribal cultural resources on the Project site, the Project and Project with Building A Residential/Commercial would not result in a cumulatively considerable impact to tribal cultural resources, and no mitigation is required. (Draft EIR, p. 3.10-5 through 3.10-6)

### **3.11 UTILITIES AND SERVICE SYSTEMS (SECTION 3.11 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment facilities or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects? (Draft EIR, p. 3.11-13)
- Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (Draft EIR, p. 3.11-13)
- Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (Draft EIR, p. 3.11-15)
- Would the project generate solid waste in excess of State or local standards, in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste goals? (Draft EIR, p. 3.11-24)
- Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Draft EIR, p. 3.11-26)

#### **Proposed Mitigation**

None required.

#### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

As noted above and explained below, the Draft EIR analysis determined that implementation of both the Project and Project with Building A Residential/Commercial would not result in significant impacts related to utilities and service systems. As such, findings under Section 15091 of the State CEQA Guidelines are not warranted.

#### **Supporting Explanation**

##### ***Project and Project with Building A Residential/Commercial***

##### **Water Supply and Infrastructure**

Pasadena Water and Power (PWP) provides potable water to City residents and businesses. The water supply analysis was derived from the *Affinity Project Water Supply Assessment (WSA)*, prepared for the Project and Project with Building A Residential/Commercial by ESA and dated January 2022 (provided as Appendix I of the Draft EIR). It is noted that the Project and Project with Building A Residential/Commercial do not qualify as a "project" under Senate Bill (SB) 610, which requires preparation of a WSA (Section 10912[a] of the Water Code). Nonetheless, based on comments received on the Notice of Preparation of this Draft EIR and given that all of California's 58 counties are under a drought emergency proclamation as of the preparation of the Draft EIR, a WSA was prepared for the Project and Project with Building A Residential/Commercial to inform the environmental analysis.

Construction activities would use approximately 4.61 million gallons (MG) or 14.1 acre-feet (af) of water for dust control purposes during demolition, excavation, grading activities, equipment

cleaning, vehicle wash downs, washout basins, and re-compaction of backfill materials, concrete pouring, and other uses. Once operational, in all water year types, including single-dry and multiple-dry years, it is anticipated that the worst case (conservative estimate) net demand of approximately 76 acre feet per year (afy) for the Project and net demand of approximately 68 afy for the Project with Building A Residential/Commercial would remain unchanged, unless consumers within the City's service area are specifically asked to reduce water use through active conservation measures (refer to Tables 3.11-8 and 3.11-13 on pages 3.11-18 and 3.11-24). The water demand estimates include all indoor uses and landscape irrigation in all water year types.

In normal years, an annual water demand of 76 afy represents about 0.24 percent of the City's anticipated total system supply of 31,078 afy in 2025, 0.24 percent of the supply of 31,537 afy in 2040, and 0.24 percent of the supply of 31,409 afy in 2045. An annual water demand of 68 afy represents 0.22 percent of the City's anticipated total system supply of 31,078 afy in 2025, 0.22 percent of the supply of 31,537 afy in 2040, and 0.22 percent of the supply of 31,409 afy in 2045. The water demand for the Project with Building A Residential/Commercial scenario is approximately 8 afy lower than for the Project. The 2020 Urban Water Management Plan (UWMP) aligns with Pasadena's population and land use and is consistent with SCAG population and employment projections; and thereby includes potential water demands that would be generated by land use changes and new commercial and residential developments like the Project and Project with Building A Residential/Commercial. Additionally, PWP staff reviewed the WSA and concluded that the WSA meets the requirements of SB 610 and SB 221 and concurred that PWP would have sufficient water supplies to meet existing demands combined with the estimated demands of up to 76 afy and cumulative demands anticipated in the 2020 UWMP. Therefore, there would be sufficient water supplies available to serve the Project or Project with Building A Residential/Commercial and reasonably foreseeable future development during normal, dry, and multiple dry years.

The Project would include installation of new potable and fire water connections to the existing PWP water lines. As discussed in the Draft EIR, all connections to wet and dry utilities would occur to the east on South Arroyo Parkway. The proposed water infrastructure would be constructed within the site, as defined in Section 2.0 and the potential for construction-related impacts are analyzed throughout the Draft EIR, including short-term air quality (Section 3.1) and noise (Section 3.7). There would be a less than significant impacts related to water supply or infrastructure, and no mitigation is required. (Draft EIR, p. 3.11-13 through 3.11-24)

#### Wastewater Conveyance and Treatment

The Project or Project with Building A Residential/Commercial would tie into the existing 8-inch diameter City of Pasadena sewer line within the eastern portion of Arroyo Parkway and would flow east at the connection with the 8-inch-diameter line in California Boulevard. Wastewater flow in the City's local sewer lines serving the site discharge to either or both the Los Angeles County Sanitation Districts' (LACSD's) 21-inch-diameter Arroyo Seco Section 4 Trunk Sewer or 16-inch-diameter Arroyo Seco Section 5 Trunk Sewer. LACSD indicates that wastewater would be conveyed and treated at either the Whittier Narrows Water Reclamation Plant (WRP), which has a remaining capacity of 5.1 mgd, or the Los Coyotes Whittier Narrows WRP, which has a remaining capacity of 16.2 mgd. The LACSD estimates a total of 92,642 gallons per day (gpd) of wastewater generation, not including Whole Foods Market, from the Project or Project with Building A Residential/Commercial. Based on the estimated wastewater generation from existing uses on-site (not including Whole Foods Market) of 15,798 gpd of wastewater, the Project or Project with Building A Residential/Commercial would result in a net wastewater generation of approximately 76,844 gpd (0.076 million gallons a day [mgd]). Wastewater flows of approximately 0.076 mgd represent 0.1 percent of the Arroyo Seco Section 4 Trunk Sewer, 1.8 percent of the

Arroyo Seco Section 5 Trunk Sewer, 1.5 percent of the Whittier Narrows WRP, and 0.5 percent of the Los Coyotes WRP remaining capacity. Sewer line capacity is part of the City's standard plan check/project approval process. No relocation or construction of new or expanded City-owned sewer lines has been determined necessary with Project implementation. There would be less than significant impacts related to wastewater conveyance and treatment, and no mitigation is required. (Draft EIR, p. 3.11-13 through 3.11-15)

#### Dry Utilities (Electrical, Natural Gas, and Telecommunications)

The Project or Project with Building A Residential/Commercial would tie into existing underground electric and telecommunications lines located in the sidewalk on the west side of South Arroyo Parkway (adjacent to the site) and the existing natural gas line located along the east side of Arroyo Parkway. There are four existing natural gas meters within the eastern portion of the site; the Project or Project with Building A Residential/Commercial proposes to tie in and reuse these gas meters and associated laterals crossing under Arroyo Parkway.

Electric and natural gas services are regulated by the California Public Utilities Commission (CPUC), which requires that these utilities provide services as required by the public. Telecommunications services are provided on demand in a free market system. The need for new, expanded, and/or relocated dry utilities would be determined as part of future individual projects and dependent on the conditions at each project site. There would be less than significant impacts related to the relocation or construction of dry utility infrastructure to serve the Project or Project with Building A Residential/Commercial, and no mitigation is required. (Draft EIR, p. 3.11-14 and 3.11-15)

#### Solid Waste

Solid waste would be collected by a private hauler and may be transported to any landfill in the State with capacity that can accept the municipal waste. The primary location that accepts City waste is Scholl Canyon Landfill. Construction of the Project or Project with Building A Residential/Commercial is conservatively estimated to generate approximately 1,125 cy of waste requiring landfill disposal after implementation of a 75 percent waste diversion pursuant to the City's Construction and Demolition Recycling Ordinance.

The one-time disposal of approximately 1,125 cy would represent approximately 0.07 percent of Scholl Canyon Landfill's remaining permitted capacity. Implementation of the Project was estimated to generate approximately 2,175 tons per year (approximately 5.96 tons per day) of solid waste requiring disposal after diversion or approximately 0.06 percent of Scholl Canyon Landfill's remaining permitted capacity. The Project with Building A Residential/Commercial was estimated to generate approximately 1,433 tons per year (approximately 3.9 tons per day) of solid waste requiring disposal after diversion; this is slightly less daily solid waste generation than the Project and would represent approximately 0.04 percent of Scholl Canyon Landfill's remaining permitted capacity.

The City implements the California Integrated Waste Management Act through Section 8.61 of the PMC, which establishes the City's "Solid Waste Collection Franchise System". The Project and Project with Building A Residential Commercial would be required to comply with the applicable solid waste franchise's recycling system and would therefore meet local and State solid waste diversion regulations. In addition, the Project and Project with Building A Residential Commercial would be required to comply with the City's Construction and Demolition Ordinance that requires diversion of at least 75 percent of the construction waste stream from landfill disposal

(Section 8.62 of the PMC). There would be less than significant impacts related to solid waste, and no mitigation is required. (Draft EIR, p. 3.11-24 through 3.11-26)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

##### ***Water***

As the Project and Project with Building A Residential/Commercial are consistent with the Project's land use designation in the General Plan as part of planned growth within the City's Central District, potential demand for the Project was considered as part of the PWP 2020 UWMP. Therefore, the WSA finds that the Metropolitan Water District (MWD), as the wholesale potable water supplier has sufficient water supplies available to serve its member agencies, including PWP, now and over a 20-year planning horizon. In addition, PWP's groundwater, including its annual groundwater credits stored in the RB, are reliable in all water year types. With that understanding, the WSA concludes that PWP has sufficient water supplies in all water year types provided through MWD and supplemented with local groundwater to meet existing demands combined with the Project demands and cumulative demands through the 20-year planning horizon of the PWP 2020 UWMP. Therefore, the Project or Project with Building A Residential/Commercial would not result in a cumulatively considerable impact related to water supplies, and no mitigation is required. (Draft EIR, p. 3.11-26 and 3.11-27)

##### ***Wastewater***

For wastewater conveyance and treatment services, the geographic area for consideration of cumulative impacts is the City of Pasadena (for locally owned sewer lines) and the LACSD service area (for regional facilities). The City manages its wastewater infrastructure through the Sewer Master Plan, prepared by the City's Department of Public Works and based on forecasts of wastewater flows with buildout of the General Plan. Individual development projects in the City would be required to remit the appropriate sewer facility charge consistent with Chapter 4.53 of the PMC, which ensures that new development pays its estimated cost for any capacity upgrades to the City sewer system. Also, as discussed in the Initial Study, the Project and Project with Building A Residential/Commercial would be within the remaining development capacity of the General Plan for the Central District Specific Plan. Regarding LACSD facilities, as discussed above, the Project and Project with Building A Residential/Commercial would represent a nominal incremental contribution to regional wastewater flows requiring conveyance to and treatment at the LACSD's WRPs. All future development projects in the LACSD's service area would be subject to the LACSD's Wastewater Ordinance, which includes the Connection Fee program. The Project or Project with Building A Residential/Commercial would not result in a cumulatively considerable impact to wastewater conveyance or treatment facilities, and no mitigation is required. (Draft EIR, p. 3.11-27 and 3.11-26)

##### ***Dry Utilities***

Because electricity, natural gas, and telecommunications are provided on demand, including CPUC-regulated utilities, the expansion of services based on regional growth is part of each provider's business strategy. Therefore, growth and development in the City is not expected to result in adverse impacts on dry utilities. The Project or Project with Building A Residential/Commercial would not contribute to a cumulatively considerable impact related to the need for new or expanded dry utilities, and no mitigation is required. (Draft EIR, p. 3.11-27 and 3.11-26)

### *Solid Waste*

Solid waste collection services are provided on demand by private haulers and cumulative impacts on their services from future development in the City are not expected to result in adverse impacts on solid waste collection services. Available landfill capacity is expected to decrease over time with future growth and development in the City; however, waste reduction and recycling programs and regulations are expected to reduce this demand and extend the life of existing landfills. CalRecycle is responsible for administering and monitoring State solid waste reduction initiatives, and individual jurisdiction's ability to meet these requirements. It is assumed that CalRecycle's role would continue into the future. Based on the available capacity of landfills in the region and the Project's nominal contribution of additional solid waste requiring disposal—approximately 0.06 percent of Scholl Canyon Landfill's remaining daily permitted capacity, as a conservative analysis—the Project would not contribute to a cumulatively considerable impact to landfill capacity or solid waste regulations, and no mitigation is required. While the Project with Building A Residential/Commercial would result in slightly less solid waste generation, this would not result in a difference in the cumulative impact finding for this scenario. (Draft EIR, p. 3.11-27 and 3.11-26)



## **SECTION 4.0 FINDINGS REGARDING IMPACTS MITIGATED TO BELOW A LEVEL OF SIGNIFICANCE**

The City Council finds that mitigation measures have been identified in the Final EIR that will reduce the following potentially significant environmental impacts to below a level of significance. For each environmental topic within this category, the discussion below includes: (1) a listing of the potential impacts evaluated in the EIR related to that topic and the Draft EIR page citations where the relevant discussion begins, (2) presentation of the mitigation measure(s) (MM[s]) identified in the EIR for that topic, (3) findings pursuant to Section 15091 of the State CEQA Guidelines for that topic, and (4) explanation of the substantial evidence in support of the EIR conclusion that the impact would be reduced to a less than significant level with implementation of identified MM(s).

### **4.1 CULTURAL AND PALEONTOLOGICAL RESOURCES (SECTION 3.2 OF THE EIR)**

#### **Potential Impacts Evaluated**

- Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5? (Draft EIR, p. 3.2-12)
- Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5? (Draft EIR, p. 3.2-14)

#### **Proposed Mitigation**

**MM CUL-1** To the satisfaction of the City, the Project Applicant shall engage with a licensed architect and/or engineer that meets the Secretary of the Interior's (SOI) Professional Qualifications Standards for historic architect to develop a series of protection interventions and protocols that will preserve the two historical resources on the Project site – 501 and 523 South Arroyo Parkway – during all construction activities in, on, and near these two buildings. These measures shall take into consideration the protection of and security of both resources, particularly the preservation of the character-defining features through the installation of physical protective barriers around each resource and the creation of site protocols that will eliminate the potential for physical damage resulting from impacts with construction and transport equipment.

To ensure the protection of these resources and their character-defining features, all protective barriers (which shall be installed prior to the initiation of any construction activity) and protocols shall be compliant with the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (Weeks and Grimmer 1995) (Standards) and be subject to review and approval by the City planning staff.

Site protocols for protecting the historical resources shall outline issues related to site access and navigation by contractors and construction personnel to reduce the potential for any inadvertent accidents between equipment and the two on-site historical resources. Additionally, a series of emergency measures shall be developed that outlined specific step-by-step processes in the event that an

accident involves one of the historical resources. This will likely include the following:

- 1) Stop-work protocols after an accident involving a historical resource occurs,
- 2) Notification procedures and identification key contacts,
- 3) Identification of qualified historic preservation professionals to investigate the historical resources following the determination that the area is safe,
- 4) Thorough conditions assessment of the resource by the qualified consultant to ascertain the level and extent of the damage, and
- 5) Preparation of a historical resource treatment plan to stabilize the historical resource and address the damage, which will be submitted to City staff for review and approval prior to completing the work and resumption of construction activities.

Additionally, protocols shall include regular on-site monitoring during construction activities by historic preservation consultant, either a SOI Qualified historic architect or architectural historian. The historic preservation consultant shall document the existing conditions of each resource prior to the initiation of any construction activity and prior to installation of the protective barriers and implementation of the protection protocols. This documentation phase will include high resolution digital photographs of each facade, as well as details of character-defining features for each resource. During construction, the historic preservation consultant shall prepare field report memoranda to the City confirming that the Standards compliant protection barriers are installed in accordance with the Standards, and that agreed upon protocols are being followed throughout the course of the Project. These memoranda will be submitted to City staff for their records and review. A final report outlining the conditions of the historical resources prior, during, and following the Project's construction shall be issued to the City for approval following construction activities and prior to the issuance of a Certificate of Occupancy.

**MM CUL-2** If cultural resources are discovered during construction of land development projects in Pasadena that may be eligible for listing in the California Register for Historic Resources, all ground disturbing activities in the immediate vicinity of the find shall be halted until the find is evaluated by a Registered Professional Archaeologist. If testing determines that significance criteria are met, then the project shall be required to perform data recovery, professional identification, radiocarbon dates as applicable, and other special studies; and provide a comprehensive final report including site record to the City and the South-Central Coastal Information Center at California State University Fullerton. No further grading shall occur in the area of the discovery until Planning Department approves the report.

### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the EIR (Section 15091[a][1] of the State CEQA Guidelines).

## **Supporting Explanation**

### ***Project and Project with Building A Residential/Commercial***

As determined in the Historic Resources Assessment prepared for the Project and Project with Building A Residential/Commercial, the Project site contains two historic resources: the buildings at 501 and 523 South Arroyo Parkway. The buildings at 491, 495, 499, 503, and 541 South Arroyo Parkway were determined not to be individually eligible for inclusion in the California Register of Historical Resources (CRHR) or the Local Register. Collectively, the buildings located at 491, 495, 499, 501, 503, 523, and 541 South Arroyo Parkway (referred to herein as the South Arroyo Parkway Industrial District) were determined to not be locally eligible for the CRHR under Criterion A and as a City Landmark District. The assessment by PaleoWest found that the South Arroyo Parkway Industrial District does not retain sufficient integrity to convey its historical significance. The buildings have been modified over time to accommodate their current use as commercial buildings. These modifications have led to a loss of historic material and have fundamentally changed the use and design of the buildings. Buildings that were constructed during the period of significance of the potential district, have been substantially altered over time, fragmenting the association of the extant buildings with their interrelated historical use, and compromising the integrity of setting, feeling, and association. (Draft EIR, p. 3-12-12)

The Project or Project with Building A Residential/Commercial would not involve the demolition or other physical destruction of the buildings at 501 and 523 South Arroyo Parkway, nor would it result in any significant internal or external physical modifications that would compromise the historic integrity of the buildings. The Project or Project with Building A Residential/Commercial would change the setting of the buildings at 501 and 523 South Arroyo Parkway, but those changes would not physically alter the buildings and are not substantial enough to compromise the overall historic integrity or obstruct the view of the buildings from the public right-of-way. The surrounding area has been modified over time by new construction and modifications to existing buildings, including the construction of multi-story buildings, which has resulted in the disruption of the historical setting. Therefore, the Project or Project with Building A Residential/Commercial would not result in a substantive adverse change to the historic integrity of the buildings at 501 and 523 South Arroyo Parkway. However, potential for future internal and external modifications to the buildings does exist in the form of tenant improvements. The City's existing design review process, established in Zoning Code Section 17.61.030, requires a finding of consistency with the SOI's Standards to approve any proposed exterior changes to historical buildings within the Central District. Therefore, to ensure any alterations to the buildings are appropriate, MM CUL-1 requires that the Project Applicant engage with a licensed architect and/or engineer that meets the SOI's Professional Qualifications Standards to develop a series of protection interventions and protocols that would preserve the two historical resources on the Project site – 501 and 523 South Arroyo Parkway – during construction activities. These protocols shall take into consideration the protection of and security of both resources, particularly the preservation of the character-defining features through the installation of physical protective barriers around each resource and the creation of site protocols that will eliminate the potential for physical damage resulting from impacts associated with construction and transport of equipment.

The potential for vibration to cause damage to the buildings at 501 and 523 South Arroyo Parkway was addressed, and it was determined there is potential for some construction equipment that would be used on the site to cause cosmetic damage to these buildings because of vibration. As addressed in Section 3.7, Noise, of the Draft EIR, implementation of MM NOI-1, which outlines setbacks for operation of vibration-causing construction equipment, would reduce the potential for cosmetic damage to these two buildings to a less than significant level. This is discussed

further below in Section 4.2 of this document. With implementation of MM CUL-1 and NOI-1, there would be less than significant impacts related to historic resources.

In addition, while there are no known archaeological resources within the Project site nor within ½-mile of the Project site, there is always potential to encounter previously unidentified archaeological resources during excavation in native sediments. The Project with Building A Residential/Commercial would have one less level of subterranean parking spanning both proposed buildings than the Project. However, the possibility of unknown, intact archaeological resources being present in native sediments beneath the Project site remains the same as the Project. Therefore, MM CUL-2 requires attendance by a qualified archaeologist at the pre-grade conference and identifies actions to take if cultural resources (i.e., prehistoric sites, historic sites, and/or isolated artifacts) are discovered. With implementation of MM CUL-2, there would be less than significant impacts related to archaeological resources. (Draft EIR, p. 3.2-12 through 3.2-14)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Although cultural resources are site-specific regarding any given resource (e.g., resources of important cultural value to Native Americans and the history of California), impacts may be considered cumulative simply because they relate to the loss of cultural resources in general over time throughout the region.

As noted above, the buildings at 501 and 523 South Arroyo Parkway are eligible for the Local Register and eligible for the CRHR under Criterion C; however, the Project or Project with Building A Residential/Commercial would not cause a substantial adverse change in the significance of either resource as defined in Section 15064.5 with implementation of MM CUL-1. Also, implementation of MM NOI-1 would reduce the potential for cosmetic damage to these two buildings, during construction, to a less than significant level. Therefore, the Project or Project with Building A Residential/Commercial would not result in a cumulatively considerable impact to historical resources.

Regarding archaeological resources, implementation of MM CUL-2 would reduce potential impacts to archaeological resources to a less than significant level. The more limited excavation associated with one less level of subterranean parking for the Project with Building A Residential/Commercial would not reduce the possibility of unknown, intact archaeological resources being present in native sediments beneath the site compared to the Project. The City requires implementation of this mitigation where there is potential to encounter unknown cultural resources, as appropriate, thereby avoiding a cumulative contribution to the loss of archaeological resources during development throughout the City pursuant to the General Plan. Therefore, the Project would not result in a cumulatively considerable impact to archaeological resources. (Draft EIR, p. 3.2-15 and 3.2-16)

## **4.2 NOISE (SECTION 3.7 OF THE DRAFT EIR)**

### **Potential Impacts Evaluated**

- Would the project result in generation of excessive ground-borne vibration or ground-borne noise levels? (Draft EIR, 3.7-17)

### **Proposed Mitigation**

**MM NOI-1** The potential for vibration-induced cosmetic (i.e., not structural) damage to the structures at 465, 501, and 523 South Arroyo Parkway shall be reduced by implementing the following three steps: (1) setbacks, (2) monitoring, and (3) restoration (if applicable).

- (1) The Project Applicant shall be responsible for ensuring the construction specifications include the following language: "Construction equipment shall observe setback distances of 30 feet from any of the three on-site buildings being retained (Whole Foods Market and 501 and 523 South Arroyo Parkway) for equipment equivalent to a large bulldozer (29,000 pounds or more) and 20 feet for jackhammers and loaded trucks. Small dozers and other equipment with vehicle weights of less (29,000 pounds) are not anticipated to result in substantial levels of vibration that could cause building damage".
- (2) The Project Applicant shall be responsible for placing a vibration monitor in each of the three on-site buildings to remain on the site. The contractor would need to have vibration measurements taken on the site when heavy equipment or vibration intensive activities occurs near (i.e., less than 30 feet horizontal distance) to these three buildings. Vibration measurements will be recorded and compared to the vibration thresholds appropriate for the building that may be impacted. Vibration records shall be submitted to the City once a week. The appropriate vibration thresholds are as follows: 0.12 peak particle velocity (PPV) for 501 and 523 South Arroyo Parkway and 0.30 PPV for Whole Foods Market. The Applicant shall be responsible for preparing a Monitoring Plan, describing the proposed location of vibration monitors, the timing of monitoring, collecting vibration records (including date, time, activity that precipitated the monitoring, and who recorded the vibration level), to whom and when the monitoring records will be submitted, and any remedial actions needed because of vibration readings. The Monitoring Plan is subject to review and approval by City staff and will be submitted prior to initiation of any construction activity on the site.

If vibration levels are below these thresholds, it is permissible to have construction activity with large (over 29,000 pounds) equipment, jackhammers, and/or loaded trucks within the setback distances included in item 1 above. Additionally, vibration monitoring shall guide construction activity near the perimeter of these buildings during subterranean excavation and construction activity. If vibration levels are found to exceed the applicable threshold, then the associated construction activity shall immediately halt, and alternative methods for achieving the construction activity shall be determined and employed to reduce the construction-generated vibration exposure to the building(s) to less than the thresholds. While the specific alternative methods

to be employed cannot be foreseen, as it would be depending on situation-specific factors, the performance objective of maintaining activity that results in vibration below the applicable thresholds shall guide all decisions.

- (3) If cosmetic damage does occur to one or more of these three buildings because of vibration from Project-related construction activities despite setbacks and monitoring, the Project Applicant shall be responsible for restoring the damage. Cosmetic damage includes things like, for example, cracks in paint/plaster, fallen plaster/stucco from a facade, and cracked glass. Specifically, any restorations to Whole Foods Market shall be implemented to return the damaged area to the same condition (e.g., materials, colors, style) as present at the start of construction. Any restorations to the buildings at 501 and 523 South Arroyo Parkway shall conform to the Secretary of the Interior's Standards for the Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Weeks and Grimmer 1995) (Standards), and the determination of whether the planned restorations is consistent with the Standards shall be made by a qualified historic preservation professional meeting the Secretary of the Interior's Professional Qualifications Standards for architectural history or historic architecture (Professional) and to the satisfaction of the City. The restorations to the historic buildings, if necessary, may be either to the conditions present before construction was initiated or, if the planned updates to these buildings are underway may be conducted to meet proposal conditions.

The City of Pasadena Planning & Community Development Department shall be responsible for ensuring these requirements are included in the construction specifications prior to any demolition activity on the site. The Project Applicant and the City's inspector assigned to the Project shall also be responsible for ensuring these measures are consistently implemented throughout the construction period.

### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the EIR (Section 15091[a][1] of the State CEQA Guidelines).

### **Supporting Explanation**

#### ***Project and Project with Building A Residential/Commercial***

During construction, neither pile driving nor blasting (generally the sources of the most severe vibration) would be used during Project construction. The Project would generate vibration during demolition, grading and excavation, and building construction. Estimated vibration levels when construction activities occur under the closest distance to each receptor would not exceed the vibration annoyance criteria but may exceed the building damage threshold at remaining on-site structures within the Project site (i.e., Whole Foods Market and 501 and 523 South Arroyo Parkway) during nearby construction activity (refer to Table 3.7-9 on page 3.7-18 of the Draft EIR). The only difference in the construction scenario for the Project with Building A Residential/Commercial is that subterranean parking is reduced to four levels (instead of five). However, this would not affect the vibration generation from the excavation activities themselves

because there would be the same daily construction activities. Therefore, MM NOI-1 requires that certain construction activities/equipment be set back from these buildings, that vibration monitoring is implemented, and, if cosmetic damage does occur despite setbacks and monitoring, the Project Applicant shall be responsible for restoring the damage. With implementation of MM NOI-1, there would be less than significant impacts related to vibration causing damage to the three on-site buildings being retained during construction of the Project or Project with Building A Residential/Commercial. (Draft EIR, p. 3.7-17 and 3.7-18)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

Vibration generated during construction of the Project or Project with Building A Residential/Commercial would be localized and would occur intermittently for varying periods of time throughout the construction period. Short-term cumulative vibration generated by construction of the Project or Project with Building A Residential/Commercial could occur with the combination with another project with major construction activity within approximately 1,000 feet of the site. At the time of preparation of the Draft EIR, there were no projects within 1,000 feet that were anticipated to be constructed concurrently with the Project or Project with Building A Residential/Commercial. As such, the Project would not result in a cumulatively considerable construction vibration impact. (Draft EIR, p. 3.7-19 and 3.7-20)

### **4.3 TRIBAL CULTURAL RESOURCES (SECTION 3.10 OF THE DRAFT EIR)**

- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (Draft EIR, p. 3.10-4)

#### **Proposed Mitigation**

**MM TCR-1** Prior to the commencement of any ground disturbing activity at the Project site, the Project Applicant shall accommodate a Native American Monitor (Monitor) culturally affiliated with the site as recognized by the Native American Heritage Commission (NAHC). The Monitor contracted and retained shall be at the expense of the tribe(s) that consulted on this Project. The Tribal Monitor will only be present on-site during the construction phases that involve ground-disturbing activities. Ground disturbing activities are defined by the Tribe as activities that may include, but are not limited to pavement removal, potholing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching within the Project area. The Tribal Monitor will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified.

The on-site monitoring shall end when all ground-disturbing activities on the Project site are completed, or when the Tribal Representatives and Tribal

Monitor have indicated that all upcoming ground-disturbing activities at the Project Site have little to no potential for impacting Tribal Cultural Resources.

Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed. All Tribal Cultural Resources unearthed by Project construction activities shall be evaluated by the Tribal Monitor approved by the Consulting Tribe and a qualified Archaeologist (if one is present).

If the resources are Native American in origin, the Consulting Tribe will retain it/them in the form and/or manner the Tribe deems appropriate, for educational, cultural and/or historic purposes. If human remains and/or grave goods are discovered or recognized at the Project Site, all ground disturbance in the immediate vicinity of the find shall be halted, and the County Coroner shall be notified per Section 5097.98 of the Public Resources Code and Section 7050.5 of the Health & Safety Code. Human remains and grave/burial goods shall be treated alike per Section 5097.98(d)(1) and (2) of the Public Resources Code. Work may continue in other parts of the Project site while evaluation and, if necessary, mitigation takes place (Section 15064.5[f] of the State CEQA Guidelines). Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin (non-Tribal Cultural Resource) shall be curated at a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be donated to a local school or historical society in the area for educational purposes.

### **Findings Pursuant to Section 15091 of the State CEQA Guidelines**

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the EIR (Section 15091[a][1] of the State CEQA Guidelines).

### **Supporting Explanation**

#### ***Project and Project with Building A Residential/Commercial***

Based on consultation with the Gabrieliño Tongva Tribe and Gabrieliño Band of Mission Indians – Kizh Nation pursuant with AB 52; the results of an archaeological records search conducted by the SCCIC on July 24, 2020; and NAHC Sacred Lands File search received on July 15, 2020, there are no tribal cultural resources listed on the CRHR or a local register within the site or otherwise known to the culturally affiliated Native American tribes. However, there is always the possibility that undiscovered intact cultural resources, including tribal cultural resources, may be present below the surface and encountered during excavation in native sediments. Although the Project with Building A Residential/Commercial would involve slightly less excavation and therefore somewhat less likelihood of encountering an unknown tribal cultural resource, there is



always the possibility that unknown resources may be present. Therefore, MM TCR-1 requires the Project Applicant to accommodate a Native American Monitor culturally affiliated with the site as recognized by the NAHC prior to the commencement of any ground-disturbing activity on the site. MM TCR-1 also defines the role of the Tribal Monitor, if such an individual elects to be present during construction of the Project, and the steps required if a potential tribal cultural resource is encountered during ground-disturbing activities. With implementation of MM TCR-1, there would be a less than significant impact related to tribal cultural resources. (Draft EIR, p. 3.10-4 and 3.10-5)

### ***Cumulative Impacts***

#### **Project and Project with Building A Residential/Commercial**

The cumulative impacts related to demographic growth are analyzed for the City of Pasadena. Direct impacts to tribal cultural resources are generally site specific. However, development throughout the City could potentially result in the disturbance of prehistoric archaeological resource sites (including tribal cultural resources/Native American remains). The City participates in Native American consultation consistent with AB 52 and SB 18 (when applicable). This process, in combination with site-specific archaeological studies, and any resulting site-specific mitigation measures (typically monitoring and processes to manage any unanticipated resources), would contribute to the reduction of potential tribal cultural resource impacts to the maximum extent feasible. Because there are no documented tribal cultural resources on the site and MM TCR-1 would be implemented, the Project or Project with Building A Residential/Commercial would not result in a cumulatively considerable impact to tribal cultural resources. (Draft EIR, p. 3.10-5 and 3.10-6)

## SECTION 5.0 FINDINGS REGARDING ALTERNATIVES

The City Council declares that the City has considered and rejected as infeasible Alternatives 1 through 4 identified in the EIR as set forth herein. In compliance with Section 15126.6(a) of the State CEQA Guidelines, an EIR must describe and evaluate the comparative merits of a reasonable range of alternatives to the project, or to the location of the project, which would (1) feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant effects of the project and (2) may be feasibly accomplished in a successful manner within a reasonable period of time considering the economic, environmental, social, and technological factors involved. Additionally, an EIR need not address alternatives that are infeasible, and the consideration of alternatives is governed by the rule of reason. (Draft EIR, p. 4-1)

The Lead Agency is required to identify the environmentally superior alternative, but it is not required to choose the environmentally superior alternative for approval over the project if the alternative does not provide substantial advantages over the project (i.e., does not avoid or substantially reduce to less than significant impact[s] that would otherwise occur from the project); does not attain most of the project objectives; or is infeasible due to social, economic, technological, or other considerations.

The EIR identified the following objectives for the Project and Project with Building A Residential/Commercial (see Draft EIR, p. 4-2 and 4-3):

1. Reinforce and strengthen Arroyo Parkway as a major commercial corridor and the Central District's economic vitality through the development of multi-story buildings with a variety of complementary commercial and/or residential uses in underutilized areas with higher development capacity.
2. Provide jobs, services, revenues, and opportunities that will support Pasadena as an economically vital city and allow for continued fiscal health.
3. Develop assisted living facilities that have access to local commercial services, health care facilities, community facilities, and public transit.
4. Satisfy local and regional demand for varying levels of care (independent living, residential care, continuing care) to individuals, depending on need, that are transit-accessible and pedestrian-friendly.
5. Improve Pasadena's infrastructure and urban form through modernized buildings that are energy- and water-efficient.
6. Preserve and integrate Pasadena's historic resources as part of a complementary development that reduces the risk of resource demolition, deterioration by neglect, and/or impacts from natural circumstances.
7. Invest sustainably by providing for the needs of existing and future residents and businesses while in proximity to transportation opportunities.

The alternatives analyzed in the EIR represent a reasonable range of alternatives to the Project and Project with Building A Residential/Commercial based on the applicable provisions of CEQA and the State CEQA Guidelines.

## **5.1 ALTERNATIVES CONSIDERED BUT REJECTED**

The following alternatives were considered during the scoping and planning process but were not selected for detailed analysis in the Final EIR, as discussed below.

### **Alternative Site**

CEQA requires that the discussion of alternatives focus on alternatives to the project or its location, which are capable of avoiding or substantially lessening any significant effects of the Project. Only locations that would avoid or substantially lessen any of the significant effects of the Project need be considered for inclusion in the Final EIR (Section 15126.6[f][2][B] of the State CEQA Guidelines). The Project site is a 3.3-acre property that is presently owned by the Applicant. There are no vacant or underutilized sites of sufficient size along Arroyo Parkway and within walking distance of multiple transit facilities that could feasibly accommodate the Project. Additionally, the Applicant does not own other feasible alternative sites, and the City is not aware of any other feasible alternative location that would avoid or substantially lessen any potential significant impact of the Project. Further, the Applicant cannot be expected nor required to acquire, control, or have access to another site that could accommodate the Project. Therefore, due to lack of viable and comparable sites in the site vicinity that would allow for development of the Project in a manner that would avoid or substantially lessen the Project's significant impacts (before mitigation), development of the Project on an alternative site was rejected from consideration. (Draft EIR, p. 4-4 through 4-5)

### **Project with No Variance for Historic Resources**

An alternative PD project without a variance for historic resources to increase the height of Buildings A and B was considered. This alternative would result in a total of 401,171 sf of aboveground development (including the 73,671-sf Whole Foods Market). To accommodate a project of this size, this alternative would involve demolition of 8 (of the 9) existing buildings, including the two historic buildings, totaling 51,794 sf, and construction of 327,500 sf of new development in 2 buildings representing a FAR of 2.77. These buildings would have up to 5 stories and maximum heights, including parapets, of 65 feet (with height averaging). This alternative would have up to 709 parking spaces in 5 subterranean levels. While there are no significant and unavoidable impacts associated with the Project or Project with Building A Residential/Commercial, this alternative would result in a new significant impact due to demolition of two historic buildings that would be considered significant and unavoidable. Therefore, this alternative was rejected from consideration. (Draft EIR, p. 4-5)

## **5.2 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS**

The alternatives described below were determined to represent a reasonable range of alternatives and were carried forward for detailed consideration in the EIR, which are further described in this section:

- Alternative 1: No Project/No Development,
- Alternative 2: Project Development with Existing Zoning,
- Alternative 3: All Residential Project with Variance for Historic Resources, and
- Alternative 4: All Medical Office Project with Variance for Historic Resources. (Draft EIR, p. 4-3)

With respect to the No Project alternative, Section 15126.6(e) of the State CEQA Guidelines requires that a Draft EIR evaluate a “no project” alternative to allow decision makers to compare the impacts of approving a proposed Project with the impacts of not approving that proposed Project. Section 15126.6(e)(3) of the State CEQA Guidelines describes the two general types of no project alternative: (1) when the proposed Project is the revision of an existing land use or regulatory plan, policy, or ongoing operation, the no project alternative would be the continuation of that plan and (2) when the proposed Project is other than a land use/regulatory plan, such as a specific development on an identifiable property, the no project alternative is the circumstance under which that proposed Project is not processed (i.e., no development). The second type of no project alternative was addressed in the EIR (refer to Alternative 1). (Draft EIR, p. 4-6)

For the build alternatives, it is assumed that regulatory requirements and project-specific mitigation measures identified for the Project and Project with Building A Residential/Commercial would also be implemented with these alternatives (Alternatives 2 through 4), and thus serve to reduce or avoid the potentially significant impacts similar to the Project and Project with Building A Residential/Commercial. (Draft EIR, p. 4-6)

### 5.2.1 ALTERNATIVE 1: NO PROJECT/NO DEVELOPMENT

**Description:** Under the No Project/No Development Alternative, as required by CEQA, the existing environmental setting would remain unchanged. The City would not approve a PD Plan and rezone the site to a PD zone nor would the City approve the Project or Project with Building A Residential/Commercial. This Alternative assumes the Project site would continue to remain in its existing state without demolition of any existing structures and site improvements and would continue the use and operation of the existing land uses present at the time the NOP was distributed in August 2021. (Draft EIR, p. 4-6)

**Finding:** The No Project/No Development Alternative would avoid all potential impacts from the Project or Project with Building A Residential/Commercial, which are less than significant for each environmental topic addressed in this Draft EIR with adherence to applicable regulations and implementation of mitigation, which would be required during construction only. However, in the absence of the Project or Project Building A Residential/Commercial, no land use benefits would be achieved. Also, Alternative 1 would not meet any of the Project objectives. Therefore, the City rejects Alternative 1: No Project/No Development. (Draft EIR, p. 4-9)

### 5.2.2 ALTERNATIVE 2: PROJECT DEVELOPMENT WITH EXISTING ZONING

**Description:** Alternative 2 assumes the site is developed with the same land uses as the Project or Project with Building A Residential/Commercial but with application of existing zoning (i.e., no PD Plan). The site is zoned CD-6 (Central District, Arroyo Corridor/Fair Oaks subdistrict). Alternative 2 is analyzed with two scenarios, where appropriate based on the results of the comparative analysis, same as the Project. Alternative 2 would result in a total of 217,280 sf of aboveground development, including the 79,553 sf of existing development to be retained. This amount of total aboveground development reflects the 1.5 FAR consistent with CD-6 zoning. This alternative would involve demolition of 6 (of the 9) existing buildings totaling 45,912 sf, same as the Project or Project with Building A Residential/Commercial, and construction of 2 new buildings with 137,727 sf of new development. Based on the same proportions of proposed land uses with the Project and Project with Building A Residential, Alternative 2 would result in the following:

- Building A: a 62,682-sf, 5-story (aboveground) medical office building with 3,000 sf ground-floor commercial uses;

- Building B: a 75,045-sf, 5-story (aboveground) assisted living building with 34,922 sf of assisted living uses and 40,123 sf of independent living uses including up to 51<sup>2</sup> senior housing units; and
- Up to 387 parking spaces in 3 subterranean levels.<sup>3</sup>

Like the Project with Building A Residential/Commercial, Alternative 2 could result in the following in Building A (referred to herein as Alternative 2 with Building A Residential/Commercial):

- 3,000 sf of commercial and a sales/leasing management office on the ground floor;
- Up to 108 residential dwelling units<sup>4</sup>; and
- Up to 282 parking spaces in 2 subterranean levels (1 fewer level than Alternative 2 as proposed above)<sup>2</sup>.

Alternative 2 would have maximum building heights, including parapets, of 50 feet or 65 feet with height averaging. This alternative assumes the historic resources would be retained and incorporated into the design, but with no variance proposed. Alternative 2 assumes the retained historic buildings would operate as restaurants, same as the Project. Because the same building footprints as the Project are assumed under Alternative 2, the same number and locations of trees would be removed, and the planting of two new street trees would be required. The points of ingress/egress and on-site circulation would be the same as the Project.

Alternative 2 would involve the same construction phases and overall schedule as the Project, with construction beginning in 2023 over approximately 34 months. While the overall scope of this alternative is reduced compared to the Project, it would remain as a substantial building effort. Because there would be fewer levels of subterranean parking, based on a proportional reduction in grading per level for the Project, this alternative would involve the following volumes of excavation and export:

- Alternative 2: approximately 110,406 cy of soil generating an estimated 7,886 one-way truck trips over the course of 4 months (103 workdays); and
- Alternative 2 with Building A Residential/Commercial: approximately 73,604 cy of soil, generating an estimated 5,257 one-way truck trips over the course of 4 months (103 workdays). (Draft EIR, p. 4-9 through 4-11)

**Finding:** Alternative 2 and Alternative 2 with Building A Residential/Commercial would result in comparatively reduced impacts related to air quality, GHG emissions, noise, public services, recreation, transportation, and utilities and service systems. This alternative would result in similar impacts related to cultural and paleontological resources, hazards and hazardous materials, land

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<sup>2</sup> Based on the same proportion of housing units with implementation of the Project with Building A Residential/Commercial (68 percent market rate residential and 32 percent senior living units) to the maximum dwelling units that would be permitted with 48 du/ac (159). In other words,  $159 * 0.68 = 108$  residential units;  $159 - 108 = 51$  senior units.

<sup>3</sup> Based on off-street parking requirements specified in Chapter 17.46 of the PMC. For building B assisted living where parking is determined through the entitlement process, the allocation is based on the same proportion of parking spaces with implementation of the Project and Project with Building A Residential/Commercial.

<sup>4</sup> Based on the same proportion of housing units with implementation of the Project with Building A Residential/Commercial (68 percent market rate residential and 32 percent senior living units) to the maximum dwelling units that would be permitted with 48 du/ac (159). In other words,  $159 * 0.68 = 108$  residential units;  $159 - 108 = 51$  senior units.

use and planning, and tribal cultural resources. Regarding energy, while this Alternative would result in a reduced VT and VMT compared to the Project and Project with Building A Residential/Commercial, it would also represent a less efficient use of the site. This Alternative would result in the same amount of demolition to redevelop an underutilized site and the resulting development would be approximately half as dense as the Project. Notably, this Alternative would not reduce any of the impacts identified for the Project or Project with Building A Residential/Commercial that would require mitigation during construction to reduce the impacts to a less than significant level. This alternative fails to meet many of the Project objectives. Specifically, Alternative 2 and Alternative 2 with Building A Residential/Commercial would only partially meet Project objectives 1 through 7. Therefore, the City rejects Alternative 2: Project Development with Existing Zoning. (Draft EIR, p. 4-15)

### **5.2.3 ALTERNATIVE 3: ALL RESIDENTIAL PROJECT WITH VARIANCE FOR HISTORIC RESOURCES**

**Description:** Alternative 3 assumes the demolition of 6 (of the 9) existing buildings totaling 45,912 sf, construction of 2 new buildings totaling 338,376 sf, and 79,553 sf of existing development to be retained, same as the Project or Project with Building A Residential/Commercial. However, Alternative 3 assumes the new buildings would include up to 289 market-rate residential units (i.e., apartments and/or condominiums) except for ground-floor commercial in Building A. Alternative 3 would result in a total of 417,929 sf of aboveground development, including the existing buildings to be retained, as follows:

- Building A: a 154,000-sf, 7-story (aboveground) residential building and ground-floor commercial uses;
- Building B: a 184,376-sf, 7-story (aboveground) residential building; and
- Up to 607 parking spaces in 4 subterranean levels.

Alternative 3 would have maximum building heights, including parapets, of 93.5 feet, the same as the Project. This alternative assumes the historic resources would be retained and incorporated into the design with a variance for historic resources proposed. Alternative 3 assumes the retained historic buildings would operate as restaurants, same as the Project. Because the same building footprints are assumed under Alternative 3 as the Project, the same number and locations of trees would be removed, and the planting of two new street trees would also be required as a planned condition of approval. The points of ingress/egress and on-site circulation would be the same as the Project.

Alternative 3 would involve the same construction phases and overall schedule as the Project, with construction beginning in 2023 over approximately 34 months. Because there would be one fewer level of subterranean parking, like the Project with Building A Residential/Commercial that has one less subterranean level than the Project, Alternative 3 would involve excavation and export of an estimated 147,211 cy of soil, generating an estimated 10,515 one-way truck trips, over the course of 4 months (103 workdays). This would equate to an average of 102 one-way trips per workday. (Draft EIR, p. 4-15 through 4-16)

**Finding:** Alternative 3 would result in comparatively reduced impacts related to air quality, energy, GHG emissions, public services, recreation, transportation, and utilities and service systems. For all other topics, including cultural and paleontological resources, hazards and hazardous materials, land use and planning, noise, and tribal cultural resources, Alternative 3 would result in similar impacts. Notably, this alternative would not reduce any of the impacts identified for the

Project and Project with Building A Residential/Commercial that would require mitigation during construction to reduce the impacts to a less than significant level. This alternative fails to meet many of the Project objectives. Specifically, Alternative 3 would meet objectives 5, 6, and 7; partially meet objectives 1 and 2; and not meet objectives 3 and 4. Therefore, the City rejects Alternative 3: All Residential with Variance for Historic Resources. (Draft EIR, p. 4-20)

#### **5.2.4 ALTERNATIVE 4: ALL MEDICAL OFFICE WITH VARIANCE FOR HISTORIC RESOURCES**

**Description:** Alternative 4 assumes the demolition of 6 (of the 9) existing buildings totaling 45,912 sf, construction of 2 new buildings totaling 338,376 sf, and 79,553 sf of existing development to be retained, the same as the Project or Project with Building A Residential/Commercial. However, Alternative 4 assumes the new buildings would include solely medical office uses except for ground-floor commercial in Building A. Alternative 4 would result in a total of 417,929 sf of aboveground development, including the existing buildings to be retained, as follows:

- Building A: a 154,000-sf, 7-story (aboveground) medical office building and ground-floor commercial uses;
- Building B: a 184,376-sf, 7-story (aboveground) medical office building; and
- Up to 1,218 parking spaces in 7 subterranean levels.

Alternative 4 would have maximum building heights, including parapets, of 93.5 feet, the same as the Project. This alternative assumes the historic resources would be retained and incorporated into the design with a variance for historic resources proposed. Alternative 4 assumes the retained historic buildings would operate as restaurants, the same as the Project. Because the same building footprints are assumed under Alternative 4 as the Project, the same number and locations of trees would be removed, and the planting of two new street trees would be required. The points of ingress/egress and on-site circulation would be the same as the Project.

Alternative 4 would involve the same construction phases and overall schedule as the Project, with construction beginning in 2023 over approximately 34 months. Because Alternative 4 would propose two additional levels of subterranean parking, based on a proportional increase in grading per level for the Project, Alternative 4 would involve the excavation and export of approximately 257,614 cy of soil generating an estimated 18,401 one-way truck trips over the course of 4 months (103 workdays). This alternative would result in approximately 40 percent more excavation (or 73,604 cy) than the Project and approximately 75 percent more excavation (or 110,406 cy) than the Project with Building A Residential/Commercial. (Draft EIR, p. 4-21)

**Finding:** Alternative 4 would result in comparatively increased impacts related to air quality, energy, GHG emissions, land use and planning, and utilities and service systems. For transportation, the impacts of Alternative 4 related to conflict with the City's TIA Guidelines would be comparatively greater, and impacts related to all other transportation issues (circulation system policies, traffic safety, and emergency access) would be similar. For public services and recreation, Alternative 4 would result in comparatively reduced impacts. For all other topics, including cultural and paleontological resources, hazards and hazardous materials, noise, and tribal cultural resources, Alternative 4 would result in similar impacts. Notably, this Alternative would not reduce any of the impacts identified for the Project and Project with Building A Residential/Commercial that would require mitigation during construction to reduce the impacts to a less than significant level. This alternative fails to meet several of the Project objectives. Specifically, Alternative 4 would meet objectives 1, 2, 6, and 7; would not meet objectives 3 and 4;

and would partially meet objective 5. Therefore, the City rejects Alternative 4: All Medical Office with Variance for Historic Resources. (Draft EIR, p. 4-25 through 4-26)

### **5.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

CEQA requires the identification of an environmentally superior alternative. Section 15126.6(e)(2) of the State CEQA Guidelines states that if the No Project Alternative is the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other alternatives. Accordingly, in accordance with the State CEQA Guidelines, a comparative evaluation of the alternatives discussed above indicates that Alternative 3 is the environmentally superior alternative because of (1) reduced comparative impacts, (2) the extent of the reduction in VT and VMT per capita compared to both the Project and Project with Building A Residential/Commercial while maximizing the redevelopment of an underutilized site near transit, and (3) a greater consistency with local, regional, and State policies adopted for the purpose of avoiding or reducing an environmental effect. However, none of the build alternatives would reduce or eliminate the significant impacts of the Project and Project with Building A Residential/Commercial with or without mitigation. This is because these impacts are related to construction activity and would occur regardless of the scope of construction. Specifically, potential impacts to cultural and tribal cultural resources are associated with any excavation in both disturbed and native soils. The potential impact related to vibration damage to the existing on-site buildings to remain would occur with any of the alternatives because the same type(s) of construction activity and equipment that could result in this impact would be used. (Draft EIR, p. 4-26 through 4-29)



## **SECTION 6.0 FINDING REGARDING SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES**

Section 15126(c) of the State CEQA Guidelines requires an EIR to discuss the significant irreversible environmental changes that would occur because of the project. Generally, an impact would occur under this category if, for example: (1) the proposed consumption of resources is not justified (e.g., the project involved the wasteful or inefficient use of energy); (2) the project would involve a large commitment of nonrenewable resources; or (3) the project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

Implementation of the Project would convert all but two of existing commercial buildings to a medical office building, commercial uses, and an assisted living building with subsurface parking and related improvements. The Project with Building A Residential/Commercial would convert the site into a residential building, commercial uses, and an assisted living building. Because the proposed uses would be a redevelopment of the site, neither the Project nor Project with Building A Residential/Commercial is considered a new long-term commitment of land resources. Nevertheless, construction activities would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment. However, the Project or Project with Building A Residential/Commercial would not be creating a need for jobs or housing. The resulting growth under either scenario would fulfill an existing and anticipated future need that is based on estimates of local and regional population growth. Therefore, the non-renewable resources used in construction would be expected to be consumed by housing and employment-generating land uses that are anticipated, and are unfulfilled, in the City and the wider region. Additionally, the land uses proposed are not unusually wasteful or excessive in terms of construction materials and fossil fuel use.

Over the long term, operation of the new land uses would require the commitment and reduction of nonrenewable and slowly renewable resources, including petroleum fuels and natural gas (for vehicle emissions, lighting, heating, and cooling of structures). Other resources that are slow to renew and/or recover from environmental stressors would also be impacted by long-term implementation of the Project or Project with Building A Residential/Commercial. However, the proposed uses would be required to meet Title 24 energy efficiency standards and applicable CALGreen requirements. As such, operation of the proposed uses would be more energy efficient than any existing uses on the site. Additionally, the land uses proposed are not unusually wasteful or excessive in terms of fossil fuel use. This is in part because of the higher density development for the Project site. Nonetheless, the Project or Project with Building A Residential/Commercial represent a long-term commitment of essentially non-renewable resources.

Regarding the potential for irreversible damage caused by environmental accidents, while construction and operation of the Project or Project with Building A Residential/Commercial would result in the use, transport, storage, and disposal of hazardous materials and/or wastes typical of urban areas, such as associated with medical/health care facilities, dry cleaners, restaurant and office cleaning/maintenance, and landscape maintenance, all activities would comply with applicable State and federal laws related to hazardous materials transport, use, and storage. This would significantly reduce the likelihood and severity of accidents that could result in irreversible environmental damage, and such an accident resulting in irreversible damage is not considered reasonably foreseeable. (Draft EIR, p. 5-1 and 5-2)

## **SECTION 7.0 FINDING REGARDING GROWTH-INDUCING IMPACTS**

Sections 15126(d) and 15126.2(e) of the State CEQA Guidelines require and EIR to discuss the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth inducements; however, is not considered necessarily detrimental, beneficial, or significant to the environment.

### **Removing Obstacles to Growth**

No major new infrastructure facilities are required to support the Project or Project with Building A Residential/Commercial beyond the new connections to existing utilities that would be constructed on the site. Approval of the PD Zoning District and PD Plan (this includes approval of the Affinity Project, zoning map amendment to rezone the property from CD-6 to PD-39, and variance for Historic Resources for Building Height) would be required to allow for development of the Project or Project with Building A Residential/Commercial. But these changes would be specific to the Project site and would not remove obstacles to growth in the surrounding area. The proposed uses under either scenario are in line with the collective uses and growth within the area and part of the development in the City that has been trending toward greater density development. (Draft EIR, p. 5-3)

### **Expansion of Public Services**

None of the public service agencies consulted—Pasadena Fire Department; Pasadena Police Department; Pasadena's Parks, Recreation, and Community Services Department; and Pasadena Public Library—during the preparation of this Draft EIR indicated that the Project or Project with Building A Residential/Commercial would necessitate the immediate expansion of their existing resources to maintain desired levels of service. While Pasadena Unified School District was consulted, there was no response. However, Senate Bill 50 establishes developer fees that are considered full and complete mitigation for school facilities. If any public service agency's resources do need to be expanded because of Citywide growth, funding mechanisms are in place through existing regulations to accommodate such growth. (Draft EIR, p. 5-4)

### **Facilitating Economic Effects**

During construction of the Project or Project with Building A Residential/Commercial, a number of design, engineering, and construction-related jobs would be created at the site. This would be a temporary situation, lasting until construction is completed. The construction crew would obtain commercial goods and services from existing businesses near the site. This would provide economic stimulus in the area; however, these jobs are typically filled by existing residents of the region and would not be substantial enough to foster other activities (e.g., new real estate development) that would have significant effects on the environment.

Operation of the Project would result in up to 222 residents, 737 employees, and up to 694 visitors per day. Operation of the Project with Building A Residential/Commercial would result in up to 715 residents, 95 employees, and up to 128 visitors per day. This would represent an increased demand for economic goods and services in the Project area and could, therefore, encourage the creation of new businesses, the expansion of existing businesses, or investment in commercial uses near the site that address these economic needs. At any given time, there are a variety of vacant commercial buildings for sale or lease available throughout the City that can accommodate future business. New commercial or mixed-use development not utilizing existing buildings at the

respective site would generally involve site redevelopment. Regarding expansion of commercial uses in the City resulting in environmental impacts, both the use of existing buildings (and related updates) or redevelopment of a site are generally relatively low impact activities compared to development on greenfields and/or locations without existing utility and transportation infrastructure. While there could be an indirect, growth-inducing effect caused by the Project (or Project with Building A Residential/Commercial), such development would be within the growth anticipated for the City. As of the time of Draft EIR preparation, there is over 3.3 million commercial square feet of remaining development capacity throughout the City pursuant to the City's General Plan (refer to Table 2-5 on page 2-17 of the Draft EIR). Demand for housing from on-site employees not already living in the City may also increase occupancy in the City's vacant dwelling units (estimated at 11,479 dwelling units in May 2021). Additionally, any demand for housing from employees would also be within the growth anticipated for the City, as there are 2,483 residential units in the City's remaining development capacity as of October 2021. The environmental impacts of future development near the site would have to be considered by the City as part of individual environmental reviews, in accordance with CEQA. (Draft EIR, p. 5-4 and 5-5)

### **Precedent-Setting Action**

The Project and Project with Building A Residential/Commercial would not require a General Plan amendment, but approval of a PD district and PD Plan. Adoption of a PD zoning district would reclassify the Project site from CD-6 to PD-39, while simultaneously establishing applicable land use regulations and development standards that are specific to the newly established zoning district. The regulations and standards that dictate permitted and conditionally permitted land uses and development, would be prescribed in the accompanying PD Plan. This ensures the Project or Project with Building A Residential/Commercial is developed as intended. Development of the Project site using a PD Plan is not precedent setting because it is an existing, accepted part of the Pasadena Zoning Code.

No changes to any of the City's building safety standards (i.e., building, grading, plumbing, mechanical, electrical, fire codes) are proposed or required to implement this Project or Project with Building A Residential/Commercial. Mitigation measures have been identified to require that Project implementation complies with all applicable federal, State, regional, and City standards and ordinances to ensure that there are no conflicts with applicable land development regulations and that environmental impacts are minimized. Finally, creation of commercial, medical, assisted living, and/or residential facilities is not unique, such that its implementation would set a precedent, facilitating other activities and resulting in significant impacts to the environment.

While the Project may induce development or redevelopment at parcels within the Project area, the potential for reuse of unutilized commercial structures and the (re)development of lands in the surrounding area are subject to property owner discretion and often largely influenced by regional economic conditions and market demands that may have limited or major links to the Project. Site improvements may make adjacent areas more attractive to investors and promote redevelopment. These future projects would require independent environmental review under CEQA. Therefore, the impacts of subsequent proposals would require environmental analysis and associated mitigation to avoid or minimize their potential subsequent impacts. (Draft EIR, p. 5-5)

**ATTACHMENT G**  
**RESPONSE TO COMMENTS RECEIVED AFTER END OF DRAFT EIR PUBLIC REVIEW**  
**PERIOD**

## MEMORANDUM

June 3, 2022

**To:**

Jason Van Patten  
City of Pasadena  
Planning and Community Development Department

**From:**

Jillian Neary  
Tin Cheung

**Subject:** Response to Comments Received After End of Draft EIR Public Review Period (1 of 2)

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The following presents responses to comments submitted by Advocates for the Environment, in a letter dated May 2, 2022 (Attachment A), on the Affinity Project Draft Environmental Impact Report (EIR). The 45-day public comment period for the Affinity Draft EIR closed on March 3, 2022. Accordingly, there is no requirement in the California Environmental Quality Act (CEQA) that the City of Pasadena (City) respond to these comments. However, in the interest of full disclosure and public participation, the City responds herein. This comment letter has been divided into sequential numbered comments, is attached, and corresponding City of Pasadena responses are provided below.

**Advocates for the Environment**  
**May 2, 2022**

**Response 1.** As discussed first on page 3.4-19 of the Draft EIR, “A lead agency may assess the significance of GHG emissions by determining a project’s consistency with a local GHG reduction plan or CAP [that qualifies under Section 15183.5 of the State CEQA Guidelines”. While many municipalities do not yet have a local GHG reduction plan, the City of Pasadena adopted its current climate action plan (CAP) on March 5, 2018.

Section 3.4, Greenhouse Gas Emissions, of the Draft EIR provides a detailed quantitative analysis of greenhouse gas (GHG) emissions for both the Project and Project with Building A Residential/Commercial as part of the Threshold 3.4a analysis beginning on page 3.4-14 with supporting data in Appendix B. Furthermore, the analysis of Threshold 3.4b does discuss the appropriate efficiency metric from the CAP, as being a relevant plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, most of the analysis under Threshold 3.4b discusses the most relevant State and regional plans, policies, and regulations. As such, the assertions that the GHG emissions analysis “almost exclusively” focuses on Threshold 3.4b and the Draft EIR “briefly and conclusively” mentions consistency with plans other than the CAP are both inaccurate and unsubstantiated. Further, there is no requirement in CEQA or the State CEQA Guidelines nor is it generally appropriate or warranted to assess a project against every relevant program or policy. The GHG emissions analysis was prepared fully in accordance with both CEQA and the State CEQA Guidelines and the state of the practice. Finally, note that the comments regarding the analysis in Threshold 3.4b center around the CAP’s Checklist and the alignment of the Checklist with the CAP; however, this is not the question posed by CEQA related to GHG emissions. Threshold 3.4b asks whether the Project (or Project with Building A Residential/Commercial) conflicts with the CAP, and not whether the CAP and Checklist are “in alignment” (which they are). Accordingly, as an overarching matter, the comments in this regard are irrelevant to whether an adequate CEQA analysis and disclosure were presented. Please refer to Responses 2 through 10 and 14 below.

**Response 2.** As expressed on page 10 of the Pasadena CAP, the purpose of the CAP is, “to analyze GHG emissions at a programmatic-level, outline a strategy to reduce and mitigate municipal and community-wide GHG emissions, demonstrate Pasadena’s commitment to achieving the state-wide emissions reduction

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targets, and serve as a qualified GHG reduction plan consistent with Guidelines Section 15183.5.” The CAP was adopted by the City Council on March 5, 2018, after an extensive public process that involved two public open house meetings, three public meetings with the City’s Environmental Advisory Committee (EAC), and public hearings before both the Planning Commission and City Council. A draft of the CAP was also circulated for public review and input along with the corresponding CEQA document (Initial Study/Negative Declaration).

The CAP established the following GHG reduction goals:

- 27 percent below 2009 levels by 2020 (equivalent to 14 percent below 1990 levels), exceeding the AB 32 State target of 15% below 2009 levels (equivalent to 1990 levels);
- 49 percent below 2009 levels by 2030, equivalent to the SB 32 State target;
- 59 percent below 2009 levels by 2035 (no State target); and
- 83 percent below 2009 levels by 2050, equivalent to the EO S-3-05 state target.

To reduce the City’s GHG emissions, the CAP identifies 5 climate strategies, 27 measures, and 142 actions.

The CAP includes a “Consistency Checklist” in Appendix D as a tool for determining an individual project’s consistency with the CAP. As with most long-range plans, conformity with every policy, strategy, measure, or implementation action is not necessary for a project to be found to be consistent with the CAP. In fact, many of the CAP’s measures and actions are not applicable at the project level and many of the measures and actions are only supportive in nature and did not contribute to the reduction of GHG emissions quantified in the CAP. Thus, through the CAP process, the City developed the Consistency Checklist as a way to meaningfully determine if an individual proposed development project is consistent with the overall CAP. The Consistency Checklist is intended for use in the CAP implementation and monitoring process and to support the achievement of individual CAP measures as well as Pasadena’s overall GHG reduction goals. As noted in Appendix D of the CAP, “Projects that meet the requirements of this [Consistency] Checklist will be deemed to be consistent with Pasadena’s CAP and will be found to have a less than significant contribution to cumulative GHG (i.e., the project’s incremental contribution to cumulative GHG effects is not cumulatively considerable), pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b).” Accordingly, the comment that the Checklist is not in alignment with the CAP as a whole and has no procedural authority under CEQA is inaccurate.

The Consistency Checklist identifies a 3-step process for determining a project’s consistency with the CAP:

- Step 1: Complete a Master Land Use Application Form
- Step 2: Demonstrate Consistency with the Land Use Element of the General Plan
- Step 3: Demonstrate Consistency with Pasadena’s CAP, through one of the following three options:
  - Option A: Sustainable Development Actions – Demonstrate that the proposed project is consistent with the Pasadena CAP by incorporating applicable actions intended to ensure that the project contributes its fair share to the City’s cumulative GHG reduction goals.
  - Option B: GHG Efficiency - Demonstrate that the proposed project is consistent with Pasadena’s per person GHG efficiency thresholds.

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- Option C: Net Zero GHG Emissions – Demonstrate that the proposed project would not result in a net increase in GHG emissions.

Regarding Step 1, an application for the Project or Project with Building A Residential/Commercial is on file with the City of Pasadena, Department of Planning and Community Development.

Regarding Step 2, Section 3.6 of the Draft EIR includes a detailed analysis of consistency with the General Plan and concludes that the Project and Project with Building A Residential/Commercial are consistent with the General Plan and would not require a General Plan Amendment (see pages 3.6-7 to 3.6-12).

Regarding Step 3, Section 3.4 of the Draft EIR evaluates the Project pursuant to Option B: GHG Efficiency. As shown in the analysis on pages 3.4-14 to 3.4-19 of the Draft EIR, the annual emissions from the Project and the Project with Building A Residential would be below the GHG efficiency metric identified in the CAP Consistency Checklist for the opening year of the Project or Project with Building A Residential/Commercial.

Based on the above and the analysis in the Draft EIR, the Project and Project with Building A Residential/Commercial were found to be consistent with the CAP.

**Response 3.** The commenter cites a “performance indicator” from the CAP (related to zero-net energy standards for new buildings) and claims that the analysis of the Project’s consistency with the CAP using Option B of the CAP Consistency Checklist “fails to ensure that requirement is met.”<sup>1</sup> The commenter’s assertion that the CAP’s “performance indicators” are requirements for projects is incorrect. As noted on page 42 of the CAP, the performance indicators are meant to “evaluate the performance of each measure and monitor its success.” The performance indicators are not meant to be universally implemented or achieved on every individual development project. The performance indicators span a wide range of categories and approaches including, but not limited to, the City’s installation of bike lanes; shifting travel mode shares; reducing vehicle idling; implementing the General Plan Land Use Element; reducing building energy use; shifting to renewable and carbon-free energy; reducing water consumption per capita; increasing waste diversion; and planting additional trees. Given the ranging applicability of these performance indicators—and their intention for monitoring CAP progress, rather than imposition on projects—conformity with each performance indicator is not required for a project to be deemed consistent with the CAP. Nor is it appropriate to determine a project’s consistency with the CAP by analyzing the project’s compliance with the performance indicators. Rather, as explained in Response 2 above, the City developed the CAP Consistency Checklist as a tool to meaningfully evaluate individual development project’s consistency with the CAP.

Regarding the comment that the City, “limited the analysis of the Pasadena CAP to a single calculation of GHG efficiency metric for only one year, ignoring the GHG impact of the remaining 29 years the buildings will be operational, and all of the long-term goals as described in the CAP,” Option B of the Consistency Checklist includes a graduated set of GHG efficiency thresholds for comparison with the project’s first operational year GHG emissions. Contrary to the commenter’s assertion, this approach does not ignore future emissions, but rather evaluates a project’s highest emitting year, as GHG emissions are anticipated to reduce on an annual basis into the future as more stringent GHG reduction measures and regulations are implemented.

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<sup>1</sup> It is unclear what the commenter intended by referring to CAP page 63. The performance indicators on this page, along with the measure and implementation actions, are related to energy conservation in municipal facilities.

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**Response 4.** See Responses 2 and 3, above. The commenter’s assertion that “the Checklist is not determinative of CEQA compliance” and that “consistency with the Checklist is not a reasonable substitute for consistency with the CAP and instead establishes an unprecedented procedural standard outside of CEQA guidelines” are not comments as to how the DEIR fails to satisfy CEQA’s disclosure and good faith analysis requirements, and the commenter does not identify what provisions of CEQA or the CEQA Guidelines the project’s GHG analysis doesn’t satisfy. As further explained in Response 2, conformity with every policy, strategy, measure, or implementation action is not necessary for a project to be found to be consistent with the CAP.

**Response 5.** The Pasadena CAP is a City-initiated and City-adopted plan that was developed through a public process that itself was subject to CEQA review. As the agency that prepared and adopted the CAP, and as the lead agency pursuant to CEQA, the City has the authority to prescribe the procedures for demonstrating compliance with the CAP. Regarding Threshold 3.4b, based on the detailed analysis in Section 3.4 the EIR the Project and Project with Building A Residential/Commercial were found to not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Moreover, the proposed Project or Project with Building A Residential/Commercial would implement many of the GHG reduction techniques expressed in the CAP, the Sustainable Communities Strategy, and the Climate Change Scoping Plan. The proposed Project or Project with Building A Residential/Commercial would be an urban infill, mixed-use project, surrounded by complementary land uses within a Transit Priority Areas (TPA) and High Quality Transit Areas (HQTA) serviced by two Metro L (Gold) Line stations as well as bus lines. The Project is required to be built to the latest California Green Building Standards Code resulting in a variety of GHG emissions-reducing elements, including energy and water efficient building construction, electric vehicle charging infrastructure, and bicycle storage and parking.

The commenter asserts that not conforming with a single “performance indicator” in the CAP, Zero Net Energy for all new construction of residential buildings as mandated by Title 24, is reason to deem the Project inconsistent with the CAP. As explained in Response 2 above, conformity with each and every policy, measure, or action in a plan is not required to determine that a project is consistent with the plan. Further, as explained in Response 3, the CAP’s performance indicators are not meant to be universally implemented or achieved on every individual development project, but rather are intended to evaluate the performance of the CAP’s measures and to monitor the CAP’s success. Regardless, the Project is consistent with the applicable requirements of Title 24<sup>2</sup>, which is the intent of this performance indicator.

**Response 6.** The Project’s land use patterns would not change over time, as the Project is an individual development project and not a long-range plan. As explained in Response 3, the Consistency Checklist includes a graduated set of GHG efficiency thresholds for comparison with the project’s first operational year GHG emissions. This approach evaluates a project’s highest emitting year, as the Project’s GHG emissions are anticipated to decrease on an annual basis into the future as more stringent GHG reduction measures and regulations are implemented at federal, State, and local levels. This includes, but is not limited to, compliance with the transition to 100 percent renewable carbon free energy by the year 2045 for electricity providers as required under the State of California’s Renewable Portfolio Standard, and a higher percentage of electric vehicles in the region’s fleet mix. In other words, the GHG emissions stemming from operation of the Project (or Project with Building A Residential/Commercial) would be reduced over time

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<sup>2</sup> To clarify, the 2019 Building Energy Efficiency Standards (Energy Code) has solar photovoltaic (PV) system requirements for all newly constructed low-rise residential buildings. The 2019 Energy Code defines a low-rise residential building as: “A building, other than a hotel/motel, that is occupancy group: R-2, multifamily, with three habitable stories or less; or R-3, single family; or U-building, located on a residential site”.



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as the both the electric grid (including electricity used by the Project) and automobiles (including those commuting or visiting the Project's uses) progressively transition away from fossil fuels. The commenter's comparison of the Project's and the Project with Building A Commercial/Residential's 2026 GHG emissions inventory with the CAP's efficiency metrics for 2031 and beyond is an apples-to-oranges comparison, as such future efficiency metrics take into account more stringent GHG reduction measures and regulations that are set to go into effect over time. The CAP Consistency Checklist clearly expresses the City's intention to evaluate the GHG emissions of a project's first operational year against the applicable efficiency metric as the method for determining consistency with the CAP.

**Response 7.** The commenter states that the Project (assumed also to refer to the Project with Building A Residential/Commercial throughout) is inconsistent with the California Air Resources Board's (CARB) 2017 Climate Change Scoping Plan (Scoping Plan) and that the CAP efficiency threshold should be based on a per-resident basis instead of the service population (resident and workers). The commenter states that the Project's GHG analysis omits discussion of how the Project is inconsistent with any of the goals including the 2050 goal of 80 percent below 1990 levels. The commenter states that the Project's net operational emissions are 3,257 metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>)/year and that there would be 14.67 MTCO<sub>2e</sub> /capita which greatly exceeds the CARB Scoping Plan targets of 6 MTCO<sub>2e</sub> for 2030 and 2 MTCO<sub>2e</sub> for 2050. The 14.67 MTCO<sub>2e</sub> calculated by the commenter is not consistent with the calculation procedures adopted by the City in the CAP. Using the procedures under the CAP, the Project would result in 3.52 MTCO<sub>2e</sub> per service population per year. Moreover, multiplying the estimated annual emissions is not accurate as it assumes any project built now would have identical GHG emissions throughout the course of a project's lifetime, which is patently false. As discussed further in Response 8, based on continuing implementation of GHG reduction plans and policies, GHG emissions are likely to decrease over time especially through changes in the vehicle mix towards more electric and renewable energy sources.

The commenter also states that the GHG efficiency threshold should not be based the service population (workers and residents) and instead should be compared against a per resident basis for comparisons between the Project and the 2017 CARB Scoping Plan. First, the use of the service population was to establish consistency with the City's CAP based on Option B and not to directly compare GHG efficiency with the 2017 CARB Scoping Plan, which is not a protocol specifically recommended by the City. As mentioned previously, the City has developed a framework for individual projects to demonstrate consistency with the CAP and, in doing so, the Project or Project with Building A Residential/Commercial would be consistent with the CARB Scoping Plan. Because the CAP specified the use of a service population (residents + full time employees) in its calculation of GHG emissions, the analysis correctly used service population in the calculation of GHG efficiency. Secondly, the use of service population is appropriate for the City considering that not all development projects have a residential component or a small residential component. As such, an efficiency threshold based on a per resident basis would be less accurate than a service population basis and would underestimate the GHG efficiency of a project due to the low number or absence of residents. Consequently, the GHG emissions analysis appropriately applied the service population consistent with the procedure established within the City's CAP.

**Response 8.** The commenter states the Project is not consistent with Executive Order B-55-18 because the Project will use gasoline, diesel, and natural gas that will result in GHG emissions. While the Project or Project with Building A Residential/Commercial would result in the consumption of gasoline, diesel, and natural gas at buildout, it is equally true there would be substantial changes in the types and quantities of fuel used in the State of California in the lead up to the 2050 target year of this Executive Order. There will be continuing efforts focused on reducing GHG intensity for electricity providers, reduced use of natural gas for heating needs, transition to electric and fuel cell vehicles, promotion of mass transit, development

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at TPAs and HQTAs, and reduction in Vehicle Miles Travelled (VMT), among other GHG reduction measures. Based on the commenter's criteria that since the Project would use gasoline, diesel, and natural gas it is not consistent with Executive Order B-55-18, no populated development project would be consistent with this Executive Order since society still currently relies on these sources of fuel. The Project or Project with Building A Residential/Commercial cannot require residents or workers to forgo the use of gasoline or diesel vehicles; however, the State of California is actively promoting the use of alternative fueled vehicles consistent with the Scoping Plan and Executive Order B-55-18. There has been a steady progression in the adoption of electric vehicles with 16 percent of new vehicle registrations in 2022 being zero emission vehicles in California (CEC 2022). The Governor of California has also established an Executive Order in 2020 that phases out the sale of gasoline and diesel fueled cars by 2035. The California Air Resources Board is developing a plan consistent with this Executive Order. Whether this Executive Order mandates the phase out of the sale of gasoline and diesel cars or whether the market share decreases the use of these fossil fueled vehicles organically, numerous automotive experts anticipate that substantial or majority share of on road vehicles will be alternatively fueled in the future. In addition, California is also still using natural gas fueled electricity generation plants. Consequently, the use of natural gas as an energy source is still pervasive but will diminish or possibly cease because of the Renewable Portfolio Standards which requires 100 percent renewable electricity generation by the year 2045 in addition to future regulations which may restrict the use of natural gas.

These macro level sources of emissions, such as from transportation choices and electricity generation by utilities, are beyond the control of local land developers. However, the Project is consistent with the goals of Executive Order B-55-18 because it focuses on aspects that affect GHG emissions within its purview, including but not limited to developing residential and commercial uses in a TPA and HQTA that is situated proximate to both light rail stations and bus stops serving eight bus lines that will provide non-single passenger vehicle options, provides complementary residential and commercial uses that would result in trip and trip length reductions, provides infill redevelopment that will promote pedestrian travel and reduce trips and trip lengths, provides bicycle racks to support non-automotive travel, electric vehicle chargers to promote alternative fueled vehicles, and the energy efficiency measures required under the State's Title 24 building code and the California Green Building Code effective at the time of construction. Because the Project would result in infill redevelopment in high energy efficiency buildings proximate to multimodal sources of transportation, it presents land use development that fulfills the progression of reduced GHG emissions needed to meet the goals of Executive Order B-55-18, the State's Climate Change Scoping Plan, and the City's CAP. Additionally, all of these benefits of the Project meet the goals of the Southern California Association of Governments' (SCAG) 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTC/SCS) *Connect SoCal*.

California Energy Commission (CEC). 2022 (May 23, last accessed). New ZEV Sales in California. Sacramento, CA: <https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/new-zev-sales>.

**Response 9.** Contrary to the commenter's assertion, as explained in Section 3.4 of the Draft EIR and in Responses 1 through 8 above, the Project does not conflict with the Pasadena CAP, the CARB Scoping Plan, or EO B-55-18. See Response 7 regarding the Scoping Plans' per-capita emissions goals for 2030 and 2050.

**Response 10.** The commenter states that the land uses in the CALEEMod inputs do not mention the 151,000 square feet (sf) of medical office uses, 3,000 sf from the restaurant, 93,000 sf of apartments, and 197,000 sf of condominiums. Appendix B of the Draft EIR provided modeling scenarios for existing, Project, and Project with Building A Residential/Commercial land uses. As shown within Appendix B, the CalEEMod

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specifically accounted for 151,000 sf of medical office uses, 3,000 sf from the restaurant, 93,000 sf of apartments, and 197,000 sf of condominiums. The commenter likely did not notice the change in the CalEEMod project titles throughout the 265 pages of modeling output. The CalEEMod project titles include Affinity – Existing, Affinity – Proposed, and Affinity - Exchange Project were provided at the beginning of each model run. As such, the comment stating that the CalEEMod modeling did not include all the relevant land uses is incorrect.

The commenter states that the water metrics stated in the Draft EIR do not align with the CalEEMod inputs. The “water metrics” referred to by the commenter are estimates associated with the Water Supply Assessment (WSA) provided in Appendix I of the Draft EIR are discussed only in Section 3.11, Utilities and Service Systems. These estimates are discussed solely in the context of determining whether adequate water supplies would be available for the Project and Project with Building A Residential/Commercial in compliance with the requirements of Senate Bill (SB) 610 and are presented nowhere else in the Draft EIR. As such, these figures are not intended to be the “DEIR water metrics” nor are they asserted to be in the Draft EIR. The water demand figures used in the CalEEMod modeling were derived from the estimates provided in Will Serve information from Pasadena Water and Power (PWP) for the Project and Project with Building A Residential/Commercial. Whereas the WSA calculated water demands based on Los Angeles Bureau of Sanitation’s 2020 wastewater generation rates. These different sources of data are the most appropriate for each application, as discussed further below.

CalEEMod inputs are intended to be a reasonable worst-case scenario to closely capture the probable emissions but not be outside the realm of possibility. As such, Project-specific information provided by the future water service provider (i.e., PWP) is the most relevant and accurate for purposes of modeling estimated GHG emissions as this represents a reasonable worst-case. However, the purpose of Will Serve information is to provide a statement of ability to provide that service at that specific point in time. On the other hand, the purpose of a WSA is to ascertain whether there would be adequate water supplies not only now, but in context of Citywide and regional water demands including under potential future multi-year drought conditions. For clarity, it is noted that the annual water demand figures from the WSA cited by the commenter as “DEIR estimates” include water use by Whole Foods Market. This is appropriate for the WSA, to provide an apples-to-apples comparison of water demands, as calculated within the WSA, for existing and future land uses across the site. However, for CalEEMod modeling, Whole Foods Market is not included as it is an existing source of emissions that would continue in the same way with implementation of the Project or Project with Building A Residential/Commercial. In conclusion, the assertion that the “inputs in the CalEEMod parameters” were deliberately changed from the defaults to reduce calculated GHG emissions is inaccurate and unsubstantiated. The purported “misalignment” is an issue of separate analyses using the most appropriate methodology for each topical issue. The conflation of these two sets of data does not support any deficiency in the GHG emissions modeling.

The commenter states the application of PWP’s GHG intensity factor cannot be reconciled with the GHG used in the CalEEMod modeling. The commenter states that the City’s utility published a CO<sub>2</sub> intensity factor of 822.62 lbs/MWh for CO<sub>2</sub>, 1.77 lbs/MWh for methane and 3.78 lbs/MWh for N<sub>2</sub>O for the year 2020. The Draft EIR extrapolated a CO<sub>2</sub> equivalent GHG intensity factor of 802 lbs/MWH for the year 2026 to be as accurate as possible. The Draft EIR’s GHG intensity factor used in the CalEEMod modeling accounted for the reductions in the GHG intensity factor that would occur because of the mandatory reductions in GHG emissions from the Renewable Portfolio Standards (RPS). In the year 2020, the Power Content Label for the City of Pasadena states that the percentage of power generation from clean renewable energy with zero emissions is 29.6 percent. By the year 2050, 50 percent of electricity produced in California would need to be from clean renewable sources. Accordingly, to obtain the GHG intensity factor for the Project buildout year of 2026, a straight-line interpolation of the percentage of renewable energy for

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the year 2020 of 29.6 percent found in the 2020 Power Content Label for the City of Pasadena and the 50 percent renewables requirement of the RPS for the year 2030. The interpolated value of 802 pounds per megawatt-hour (lbs/MWh) for the year 2026 was calculated based the renewable energy percentages used for power generation for the years 2020 and 2030. The GHG intensity factor was understated because the renewable energy percentage was increased from 50 percent to 60 percent in 2018. As such, the commenter's suggestion that the CalEEMod modeling use of the GHG intensity factor for the year 2020 found in the Power Content Label would overstate the amount of GHG emissions, since the Project would not utilize electricity for the new buildings till the year 2026, and the GHG intensity factor would have decreased from the 2020 value is inaccurate.

**Response 11.** As addressed in Responses 1 through 10 above and Responses 12 through 14 below, no changes to the Draft EIR are necessary and no significant impacts related to GHG emissions would occur. As such, no additional alternatives require consideration to reduce or avoid a significant impact related to GHG emissions. Nevertheless, even if this were not the case, an alternative that involves only retrofit or renovation of the six existing buildings proposed for demolition, and presumably maintains preservation and integration of the two historic buildings, would be neither feasible nor environmentally superior to any of the alternatives analyzed in the Draft EIR. Additionally, the argument via Preservation Green Lab that the "greenest building" is building reuse is applied without considering the context of the site's existing condition, land uses, or location near transit.

The commenter's letter correctly cites that Section 15126.6 of the State CEQA Guidelines requires an EIR to "describe a reasonable range of alternatives". Section 15126.6 of the State CEQA Guidelines also requires the alternatives be feasible, avoid or substantially lessen significant impacts, and attain most of the project objectives (see page 4-1 in Section 4.0, Alternatives, of the Draft EIR). When appropriately considering the site-specific context of the Project, it is clear the suggested alternative would be neither reasonable, feasible, reduce GHG emissions, nor meet most of the objectives.

First, and most important, there is no possibility that maintaining operation of the existing buildings, as any land use type, is environmentally preferable to constructing a higher-density infill redevelopment of an extremely underutilized and deteriorating site that has two light rail stations within approximately ¼-mile as well as multiple bus lines that run on South Arroyo Parkway with bus stops immediately proximate. Because of the latter, the Project site is within a SCAG-designated HQTAs and TPAs (refer to page 2-5 of the Draft EIR). The proposed Project (or Project with Building A Residential/Commercial) is precisely the type of development that is preferable on properties within HQTAs and TPAs, consistent with the 2020–2045 RTP/SCS, to reduce emissions produced from transportation sources, as the number one contributor to GHG emissions in the United States. As such, even *if* the commenter's suggested alternative was feasible (which it is not, as discussed further below) and if there were a significant GHG emissions impact (which there would not be), this alternative would not avoid or reduce a significant GHG emissions impact. Among other things, the suggested alternative would result in operation of buildings that are less energy efficient than new-built structures, including all feasible retrofits; and would result in greater vehicle miles traveled (VMT)/capita than the Project, Project with Building A Residential/Commercial, or any of the alternatives in the Draft EIR. The commenter refers to renovated buildings having the greatest short-term GHG savings. However, when considered in context, the short-term GHG savings would be at the expense of higher overall GHG emissions by not making good use of an underutilized site.

Second, the proposed use types in either development scenario could not reasonably be developed and operated in the separated and dissimilar structures distributed across the site, purely from a logistical point of view. To provide quality care, assisted living facilities require many specialized accessory uses that are located on premises, including but not limited to, gathering areas, a kitchen and dining facilities, and

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medical-care related areas such as examination rooms and specialized storage and disposal facilities. As such, the suggested alternative is patently infeasible. Finally, another important facet of viewing the Project in context is that housing is sorely needed throughout California. This includes market rate as well as senior living/assisted care facilities.

Section 15126.6 of the State CEQA Guidelines also states that “There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason” (see page 4-1 of the Draft EIR). In short, the suggested alternative would be unreasonable and, if discussed during Draft EIR preparation, would have been discussed among those alternatives eliminated from detailed discussion (Section 4.2 of the Draft EIR). Additionally, as there is no substantial evidence there would be a significant impact related to GHG emissions, there is no need to consider additional alternatives to the Project or Project with Building A Residential/Commercial.

**Response 12.** Table 3.9-4, City of Pasadena CEQA Transportation Thresholds, on page 3.9-7 of the Draft EIR and presented below for ease of reference, summarizes the metrics and thresholds for the City’s adopted transportation analysis methodology pursuant to Senate Bill (SB) 743.

**TABLE 3.9-4  
CITY OF PASADENA CEQA TRANSPORTATION THRESHOLDS**

Metric	Description	CEQA Impact Threshold
1. VMT Per Capita	VMT in the City of Pasadena per service population (population + jobs)	An <u>increase</u> over existing Citywide VMT per Capita of 22.6
2. VT Per Capita	VT in the City of Pasadena per service population (population + jobs)	An <u>increase</u> over existing Citywide VT per Capita of 2.8
3. Proximity and Quality of Bicycle Network	Percent of service population (population + jobs) within a ¼-mile of bicycle facility types	Any <u>decrease</u> in existing citywide 31.7% of service population (population + jobs) within a ¼-mile of Level 1 & 2 bike facilities
4. Proximity and Quality of Transit Network	Percent of service population (population + jobs) within a ¼-mile of transit facility types	Any <u>decrease</u> in existing citywide 66.6% of service population (population + jobs) within a ¼-mile of Level 1 & 2 transit facilities
5. Pedestrian Accessibility	The Pedestrian Accessibility Score uses the mix of destinations, and a network-based walk shed to evaluate walkability	Any <u>decrease</u> in the Citywide Pedestrian Accessibility Score
VMT: vehicle miles traveled; VT: vehicle trips Source: Pasadena DOT 2021		

For the “Proximity and Quality of Bicycle Network” and “Proximity and Quality of Transit Network” metrics, a significant CEQA impact occurs if there is, as noted in the table, a decrease in the existing Citywide metrics for these two measures. In other words, if either of these metrics gets worse (lower) this represents a significant impact. This makes sense, as increased use of alternative transportation methods goes hand in hand with reducing VMT per capita.

This is indicated in Table 3.9-5, Transportation Impact Analysis Summary for the Project, on page 3.9-10 of the Draft EIR and presented below for ease of reference – which is the same table presented in commenter’s letter from Appendix G-1 of the Draft EIR– with a “<” symbol in front of the threshold values for these metrics.



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**TABLE 3.9-5  
TRANSPORTATION IMPACT ANALYSIS SUMMARY  
FOR THE PROJECT**

Transportation Performance Metrics	Significant Impact Cap (Existing)	Incremental Change (Existing + Project)	Significant Impact?
VMT Per Capita	>22.6	19.5	No
VT Per Capita	>2.8	2.0	No
Proximity and Quality of Bicycle Network	<31.7%	32.0	No
Proximity and Quality of Transit Network	<66.6%	66.8	No
Pedestrian Accessibility	<3.9	3.9	No
VMT: vehicle miles traveled; VT: vehicle trips Source: Pasadena DOT 2020.			

As such, the Draft EIR conclusion that there would be a less than significant impact related to these two metrics for both the Project and Project with Building A Residential/Commercial is correct. Moreover, the slight increase in these metrics for both development scenarios indicates there would be improved proximity and quality of both the bicycle and transit networks in the site vicinity. The commenter's assertion that the Draft EIR inaccurately analyzed transportation impacts is unsubstantiated.

**Response 13.** As addressed in Responses 1 through 12 above, no changes to the Draft EIR are necessary and no mitigation measures related to GHG emissions are required. Advocates for the Environment has been added to the Project's mailing list as requested.

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## Attachment A

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### Advocates for the Environment

A non-profit public-interest law firm  
and environmental advocacy organization



Jason Van Patten, Senior Planner  
City of Pasadena  
Planning and Community Development Department  
175 North Garfield Avenue  
Pasadena, CA 91101

Via U.S. Mail and email to [jvanpatten@cityofpasadena.net](mailto:jvanpatten@cityofpasadena.net)

re: Comments on Draft Environmental Impact Report for Planned Development #39  
(Affinity Project), SCH No. 2021080103

Dear City of Pasadena:

Advocates for the Environment submits the comments in this letter regarding the proposed Planned Development #39 (Affinity) Project at 465-577 S. Arroyo Parkway in the City of Pasadena (the **Project**). Two versions of the project are proposed, each with their own greenhouse gas (**GHG**) impacts. Both alternatives include plans to rezone the site from CD-6 to a Planned Development (**PD**) zone, increase the allowable building height, demolish six existing buildings, and construct two new buildings. The Project involves a 154,000 square-foot medical office building with 850 parking spaces (**Building A Medical**) and an assisted living building with up to 95 units (**Building B**). The alternative, Project with Building A Residential Commercial, includes Building B with same specifications as the Project, but replaces Building A Medical with 197 residential units and a leasing management office (**Building A Residential/Commercial**). We have reviewed the Draft Environmental Impact Report (**DEIR**) released in January 2022 and submit comments regarding the sufficiency of the DEIR's Greenhouse-Gas (**GHG**) analysis under the California Environmental Quality Act (**CEQA**).

### CEQA GHG Significance Analysis

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The DEIR included the following two GHG significance thresholds: "Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment" (3.4a) and "Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases" (3.4b) (DEIR, 3-4.12). Almost exclusively focusing on threshold 3.4b, the significance analysis revolved around one metric from the Pasadena Climate Action Plan (**CAP**). Near the end of the significance analysis, the DEIR briefly and conclusively mentioned consistency with SCAG's Connect SoCal plan, Title 24 Energy Efficiency Standards for Residential and Nonresidential Buildings, the California Green

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Building Standards Code, and the California Air Resources Board Scoping Plan, ignoring consistency with many of the identified “relevant programs and regulations” that it previously summarized in section 3.4.2 (DEIR, 3-4.5). This method of significance analysis violates CEQA (Public Resources Code §§ 21000–21189.70.10) by being deficient in several areas, as discussed below. 1 cont

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### **Consistency with the Pasadena CAP**

The discussion of whether the Project exceeds threshold 3.4b was primarily based on the Pasadena CAP as an applicable plan. The CAP consistency analysis exclusively focused on a brief procedure, a three-step consistency checklist (**Checklist**), contained in the CAP which purportedly analyzes a project’s consistency with the CAP to bypass the consistency analysis required by CEQA. The Pasadena CAP declares that conforming with the steps, including one of the three options in step three, demonstrates compliance with CEQA requirements under CEQA Guidelines sections 15064(h)(3), 15130(d), and 15183(b). Yet, the DEIR did not mention steps one and two from the Checklist and narrowed the analysis even further to Option B within step three as the exclusive determining factor for CAP consistency. And even if the DEIR had discussed and met all three of the required steps contained with the Checklist, it would not be sufficient to show consistency because the Checklist is not in alignment with the CAP as a whole and has no authority to prescribe CEQA procedure. 2

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First, the Checklist largely disregards the CAP goals by suggesting that adherence to the Checklist alone (including steps one, two, and one of the three options in step three) is sufficient to demonstrate consistency with the CAP. When adhered to, this procedure allows consistency with the CAP to be analyzed without considering any of the guidance within the CAP. For instance, even though the CAP specifies a 2035 residential and commercial performance indicator of “950,000,000 kWh of electricity use from carbon-free energy,” and that “100% of new residential units built between 2020 and 2035 are zero-net energy (**ZNE**) (as mandated by Title 24) and 25% of new commercial units built between 2020 and 2035 are ZNE (exceeds Title 24),” one of the consistency options in the Checklist (**Option B**) fails to ensure that requirement is met. 3

Here, the City chose Option B of Checklist Step 3, which limited the analysis of the Pasadena CAP to a single calculation of GHG efficiency metric for only one year, ignoring the GHG impact of the remaining 29 years the buildings will be operational, and all of the long-term goals as described in the CAP. Consequently, the relevant performance indicators were left out of the DEIR’s discussion of CAP consistency (Pasadena Climate Action Plan, p. 63 and p. 60). Because the Checklist insufficiently accounts for CAP goals, it is not a replacement for the CAP as a whole and the DEIR needs more detailed discussion of GHG impacts beyond Checklist Step 3 to show consistency with the CAP.

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Second, despite the statements within the Pasadena CAP itself that led the City to adopt the Checklist in its analysis, the Checklist procedure is not determinative of CEQA compliance. Notably, the DEIR did not discuss consistency with the Pasadena CAP's recommendations beyond adherence to Option B of the Checklist, allowing parts of the applicable plan, including performance indicators, to be completely ignored when Option B of the Checklist is chosen. This framework essentially creates a new procedural requirement that not only differs from, but also reduces the standard required by CEQA. Therefore, because the CAP contains information not accounted for in the Checklist, consistency with the Checklist is not a reasonable substitute for consistency with the CAP and instead establishes an unprecedented procedural standard outside of CEQA guidelines.

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Ultimately, this DEIR consistency analysis cannot stand because the City of Pasadena lacks the authority to prescribe a procedure for showing consistency with the Pasadena CAP. While the chosen threshold 3.4b encourages comparison between the proposed project and relevant GHG emissions plans, it does not permit an applicable plan to circumvent CEQA Guidelines by prescribing its own separate procedure to demonstrate CEQA compliance. Therefore, because the Pasadena CAP does not have authority to specify procedure to comply with CEQA, the City must show consistency with an applicable plan notwithstanding the Checklist procedure.

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Accordingly, the DEIR should have demonstrated consistency with entirety of the Pasadena CAP to determine whether the Affinity Project conflicts with any of its included analysis and recommendations. Instead, the City insufficiently analyzed consistency by narrowly focusing on only one of the steps in the Checklist, identifying a single metric for only the first year of operation, to conclude no significant GHG impact. If it had engaged in a more complete analysis, the City would have found inconsistency with the CAP because there is no indication that the Affinity Project is conforming with some requirements of the CAP, including the performance indicator of Zero Net Energy for all new construction of residential buildings, as mandated by Title 24 (Pasadena Climate Action Plan, p.60). Effectively, given threshold 3.4b, inconsistency with the CAP indicates a significant GHG impact. Thus, the DEIR should be modified to reflect this inconsistency and conclude a significant impact, requiring mitigation to the extent feasible.

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An agency must consider a project's land use patterns over time to reasonably evaluate the GHG emissions impacts (*Cleveland Nat'l Forest Foundation v. San Diego Ass'n of Governments* (2017) 3 Cal.5th 497, 513). The DEIR accounted for a building lifespan of 30 years when amortizing the construction emissions, indicating the expected lifespan of the Project. Therefore, the full analysis of the GHG impact of the Affinity Project should likewise include the likely GHG emissions through the year 2056 (30 years beyond the Project's first operational year of 2026). As the Project will likely be operating well into 2050, that the Project must show consistency on a long-term scale to comply with CEQA.

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The DEIR's conclusion that the Project is consistent with the CAP is based on analysis of a single year, and it would have come to the opposite conclusion had it conducted a full analysis. Appendix D of the CAP includes thresholds measured in metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e), which is a standard unit for quantifying GHG emissions. Considering consistency with the Pasadena CAP for the full lifespan of the Affinity Project, the service population GHG efficiencies of 3.52 MTCO<sub>2</sub>e/year for the Project will exceed the threshold of 2.73 MTCO<sub>2</sub>e/year starting in 2031, and even without accounting for decreased efficiency as the buildings age (CAP Consistency Checklist, p. 9). And both this metric and the 2.15 MTCO<sub>2</sub>e/year efficiency metric for the Project with Building A Commercial/Residential is unlikely to meet the 2050 goal in the Pasadena CAP that adopts a statewide emissions goal of 86.2 MMTCO<sub>2</sub>e. Although the Pasadena CAP does not specify efficiency thresholds beyond the year 2035, applying the same factor used to determine prior thresholds would result in an estimated goal of 1.19 MTCO<sub>2</sub>e/year for the year of 2050<sup>1</sup>. Therefore, both the Project (3.52 MTCO<sub>2</sub>e/year) and Project with Building A Residential/Commercial (2.73 MTCO<sub>2</sub>e/year) conflict with the long-term goals established in the Pasadena Climate Action plan.

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### ***Inconsistency with Other Applicable Plans***

Under threshold 3.4b, the Project would have significant GHG emissions if it were to "Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases" This language requires that the EIR analyze the Project's consistency with all other applicable plans, not just the Pasadena CAP.

The DEIR briefly analyzed consistency with the 2017 Scoping Plan from the California Air Resources Board (2017 CARB Scoping Plan), but there are significant inconsistencies which the analysis failed to find. The Scoping Plan was developed to facilitate California's compliance with SB 32, which requires statewide GHG emissions to be reduced to 40% below 1990 levels by 2030 (Health & Safety Code § 38566). Although a discussion of consistency with the CARB 2017 Scoping Plan was briefly included in the DEIR, it notably omitted a discussion of how the Affinity Project is consistent with any of the goals, including the 2050 goal of 80% below 1990 levels. The 2017 CARB Scoping Plan sets out statewide goals for total GHG emissions targets of 6 MTCO<sub>2</sub>e/capita by 2030, and 2 MTCO<sub>2</sub>e/capita by 2050 (CARB Scoping Plan, p. 99). Because the Project's net operational GHG emissions are estimated to be 3,257 MTCO<sub>2</sub>e/year and the Project will have 222 residents, the Project's per-

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<sup>1</sup> Pasadena Climate Action Plan, p. 11 and Appendix D Consistency Checklist, p. 9. The 2030 Statewide Target 258.6 MMTCO<sub>2</sub>e corresponds to 3.57 MT CO<sub>2</sub>e/Service Person project goal, which related by a factor of 72.44 M (258.6 MMTCO<sub>2</sub>e/ 3.57 MT CO<sub>2</sub>e = 72.44 M). Likewise, the 2050 Statewide target of 86.2 MMTCO<sub>2</sub>e would result in a project goal of 1.19 MTCO<sub>2</sub>e/yr (86.2 MMTCO<sub>2</sub>e/72.44 M = 1.19 MTCO<sub>2</sub>e/yr, rounded to the nearest hundredths-place).

capita GHG emissions would be 14.67 MTCO<sub>2</sub>e/capita, greatly exceeding both the 2030 and 2050 CARB 2017 Scoping Plan targets<sup>2</sup>.

Comparisons between the Project and the efficiency metrics in the 2017 CARB Scoping Plan should be made on the basis of per-capita (per-resident) emissions, and not on the basis of service population. The alternative service-population approach used by the DEIR double-counts people who live and work on the same project site, as the DEIR itself suggests will be encouraged by the Affinity Project. Double-counting within a service population would result in a falsely inflated denominator, creating the illusion of reduced per capita GHG emissions, so the per resident emissions rate of 14.67 MTCO<sub>2</sub>e/resident is the right metric for comparison to the Scoping Plan targets. Further, because the statewide targets of 6 MTCO<sub>2</sub>e/capita by 2030 and 2 MTCO<sub>2</sub>e/capita by 2050 account for the GHG emissions from all sectors, including high-emission industries like oil refineries and cement manufacturers, any estimate purporting to be consistent with the 2017 CARB Scoping Plan for a mixed-use residential project like this one must be significantly lower than the statewide goal.

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The DEIR declares consistency with Executive Order B-55-18, but this could not be further from the truth. EO B-55-18 requires the State to achieve carbon neutrality—net zero GHG emissions—by 2050. The Project is inconsistent with EO B-55-18 because it will use gasoline, diesel, and natural gas, and burning such non-renewable fuels results in substantial GHG emissions, including 49,264.78 MTCO<sub>2</sub>e from natural gas alone (DEIR, 3-3.5)<sup>3</sup>. Because the Project is inconsistent with the Pasadena CAP, 2017 CARB Scoping Plan, and EO B-55-18, its emissions will be significant under Threshold b). Thus, the DEIR's conclusion of no significance violates CEQA.

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The DEIR claims that because the Pasadena CAP was created to be consistent with State plans, policies, and regulations, the Project must be consistent with those plans, policies and regulations if the CAP is consistent with them. But this argument is flawed; it is possible the Project to be inconsistent with State plans, policies, and regulations even if the CAP is consistent with them. Some of those inconsistencies, such as the Project's inconsistency with the 2017 CARB Scoping Plan's per-capita emissions goals for 2030 and 2050, are discussed above. The Project may be consistent with the CAP, and the CAP may be consistent in some ways with the 2017 CARB Scoping Plan, but the Project is inconsistent with the 2017 CARB Scoping Plan.

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<sup>2</sup> All metrics obtained from the DEIR.  $3257/222 = 14.67$ , rounded to the nearest hundredths-place.

<sup>3</sup> Table 3.3-2 displays energy use during operation of the project, estimating 211,629 gallons/yr gasoline, 4,226 gallons/year diesel, and 5,543,466 gallons/year natural gas. EPA estimates  $8.887 \times 10^{-3}$  metric tons CO<sub>2</sub>/gallon of gasoline, and  $5,543,466 \text{ gallons/year} \times 8.887 \times 10^{-3} \text{ metric tons CO}_2/\text{gallon} = 49,264.78 \text{ MTCO}_2\text{e}$ .  
<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>.

In conclusion, because the City chose the threshold that the Project's consistency with all applicable plans, policies, and regulations, it should have thoroughly analyzed consistency with all State plans, policies, and regulations. As reflected in the previous analysis, the Affinity Project conflicts with the Pasadena CAP, CARB Scoping Plan, and EO B-55-18. Therefore, contrary to the DEIR's conclusion of no significant impact, the GHG impact is significant.

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### **CalEEMod Deficiencies**

CalEEMod was used as a model to estimate existing project emissions to serve as the baseline for both the Project and Project with Building A Residential/Commercial from which a cumulative assessment is compared, as well as the estimation of GHG emissions for both the Project and Project with Building A Residential/Commercial. The CalEEMod analysis was included in Appendix B to the DEIR, and was inconsistent with the DEIR itself in three ways. CalEEMod should be rerun to get a more accurate estimation of Project GHG emissions.

First, certain variables were included in the table at the beginning of each run but not as a parameter in the detailed chart. although the Table 1.0 Project Characteristics in Runs 4-6 indicate "Land Uses" to include the "Medical Office Building" and "Restaurant", the table below showing CalEEMod inputs do not mention the two metrics of 151,000 square feet from the medical office and 3,000 square feet from the restaurant, even though it includes the metrics from the three other proposed buildings on the site. The land use parameter should accurately reflect the usage of land from all of the buildings, not just some of them. Similarly, for runs 6-9 the Table 1.0 Project Characteristics Indicates "Land Uses" to include "Restaurant," "Apartments," and "Condo," but in the table of parameters below, in the three metrics of 93,000 square feet, 197,000 square feet, and 3,000 square feet are notably missing from the list of parameters.

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Second, the DEIR water metrics as stated in the DEIR do not align with the CalEEMod inputs. The DEIR estimates to use 34,636,310 gallons per year for the Project, or 32,123,285 gallons per year for the Project with Building A Residential/Commercial (See Appendix I, p. 5-5 and 5-6)<sup>4</sup>. However, the inputs in the CalEEMod parameters were changed from the defaults to be much larger than what is reflected in the DEIR. The various water inputs of the Project's CalEEMod specifications indicates a total of 18,205,470 gallons per year for the Project, and 18,147,070 gallons per year for the Project with Building A Residential/Commercial, both of which are much lower than demonstrated by the DEIR (Appendix B p. 123 and )<sup>5</sup>.

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<sup>4</sup> Total water usage for the Project according to the DEIR on p. 5-5 is 94,894 gallons per day. 94,894 gallons per day x 365 days per year = 34,636,310 gallons per year. Total water usage for the Project with Building A Residential Commercial on p. 5-6 is 88,009 gallons per day x 365 days per year = 32,123,285 gallons per year.

<sup>5</sup> Total water usage for the Project according to CalEEMod parameters on p. 123 of Appendix B add up to 18,205,470 gallons per year (2,609,750 + 1,635,700 + 5,835,620 + 7,716,100 + 102,200 + 102,200 + 102,200 +

Third, the GHG intensity scores of 802 lbs/MWh for carbon dioxide, 0 lbs/MWh for methane, and 0 lbs/MWh for nitrous oxide as listed in the CalEEMod parameters cannot be reconciled with the overall GHG Intensity of 971 lbs/MWh on the 2020 Pasadena Power Content Label, despite being the only source listed for those numbers. Pasadena Water and Power releases an annual emissions report by gas type, and for 2020 the accurate carbon dioxide intensity is 822.65 lbs/MWh, methane intensity is 1.77 lbs/MWh, and nitrous oxide intensity is 3.78 lbs/MWh (Pasadena Water and Power Annual Emissions Report by Gas Type)<sup>6</sup>. The CalEEMod parameters should be edited to reflect that Pasadena has greater than zero methane and nitrous oxide emissions produced from energy usage, and the carbon dioxide intensity parameter should be increased to reflect the true carbon dioxide intensity of 822 lbs/MWh.

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## Alternatives

CEQA requires an EIR to “describe a range of reasonable alternatives” to “avoid or substantially lessen any of the significant effects of the project” (14 CFR §15126.6). An adequate discussion of alternatives should include renovation of the six existing buildings rather than demolition. Building retrofit and renovation rather than demolition can lower GHG emissions for nearly all buildings (Preservation Green Lab<sup>7</sup>). Further, renovated buildings have the greatest short-term GHG savings because they have fewer materials inputs (Preservation Green Lab<sup>8</sup>). The City did not account for the GHG impact of choosing to demolish the

102,200 = 18,205,470 gallons per year). Total water usage for the Project with Building A Residential/Commercial according to CalEEMod parameters on p. 233 of Appendix B add up to 18,147,070 gallons per year (2,122,475 + 7,555,500 + 2,122,475 + 5,835,620 + 102,200 + 102,200 + 102,200 + 102,200 + 102,200 = 18,147,070 gallons per year).

<sup>6</sup> From the Pasadena Water and Power Annual Emissions Report by Gas Type. 365,282 MT CO<sub>2</sub>e for CO<sub>2</sub>/978,917 MWh x 2204.62 lbs/MT = 822 lbs/MWh. 785 MT CO<sub>2</sub>e for CH<sub>4</sub>/978,917 MWh x 2204.62 lbs/MT = 1.77 lbs/MWh. 1,677 MT CO<sub>2</sub>e for NO<sub>x</sub>/978,917 MWh x 2204.62 lbs/MT = 3.78 lbs/MWh.

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Emissions by Gas Type (MT CO<sub>2</sub>e)

Year	CO <sub>2</sub>	CH <sub>4</sub>	NO <sub>x</sub>	CO <sub>2</sub> e	Total
2019	388,018	820	1,751	56,612	447,201
2020	365,282	785	1,677	69,333	437,076

Total Retail Sales (MWh)

Year	Total
2019	979,906
2020	978,917

<sup>7</sup> Preservation Green Lab. “The Greenest Building: Quantifying the Environmental Value of Building Reuse,” 2011, p. 66. “[R]ehabilitation and retrofit still outperform new construction, yielding fewer impacts over a 75-year lifespan (see Figures 11 – 14). This is true for all impact categories and building types, except the warehouse-to-multifamily conversion case study.” [https://living-future.org/wp-content/uploads/2016/11/The\\_Greenest\\_Building.pdf](https://living-future.org/wp-content/uploads/2016/11/The_Greenest_Building.pdf)

<sup>8</sup> Preservation Green Lab. “The Greenest Building: Quantifying the Environmental Value of Building Reuse,” 2011, p. 72. “In particular, renovated buildings with fewer material inputs have the potential to realize the greatest short-term carbon savings.” [https://living-future.org/wp-content/uploads/2016/11/The\\_Greenest\\_Building.pdf](https://living-future.org/wp-content/uploads/2016/11/The_Greenest_Building.pdf)



buildings rather than utilize the materials in the new project or retrofit for new purposes. Had the EIR found a significant impact, which it should have, in consideration of the points in previous sections of this comment letter, it would need to discuss reasonable alternatives including, but not limited to, renovation of the six buildings rather than the proposed demolition. 11 cont

## Transportation

The traffic analysis concluded no significance for all transportation metrics even though two metrics for both alternatives were above the stated CAP significance thresholds. In Table 4 of Appendix G-1 of the DEIR, two metrics were reported above the existing “Significant Impact Cap.” For the Project, the incremental change of “Proximity and Quality of Bicycle Network” was recorded as 32.0, above the threshold of 31.7, and the “Proximity and Quality of Transit Network” was recorded as 66.8, above the threshold of 66.6, as shown below. These two metrics do not fall underneath the existing significant impact cap, and therefore the report should have indicated “yes,” under the corresponding row under the significant impact column of Table 4.

Table 4. Transportation Performance Metrics Summary

Transportation Performance Metrics	Significant Impact Cap (existing)	Incremental change (existing + project)	Significant Impact?
VMT per Capita	>22.6	19.5	No
VT per Capita	>2.8	2.0	No
Proximity and Quality of Bicycle Network	<31.7%	32.0	No
Proximity and Quality of Transit Network	<66.6%	66.8	No
Pedestrian Accessibility	<3.9	3.9	No

The TDF model calculation results indicate that the project does not exceed any of the adopted CEQA thresholds of significance.

In Table 4 of Appendix G-2 of the DEIR, two metrics were reported above the existing “Significant Impact Cap.” For the Project with Building A Residential/Commercial, the incremental change of “Proximity and Quality of Bicycle Network” was recorded as 32.0, above the threshold of 31.7, and the “Proximity and Quality of Transit Network” was recorded as 66.8, above the threshold of 66.6, as shown below. These two metrics do not fall underneath the existing significant impact cap, and therefore the report should have indicated “yes,” under the corresponding row under the significant impact column of Table 4.

Table 4. Transportation Performance Metrics Summary			
Transportation Performance Metrics	Significant Impact Cap (existing)	Incremental change (existing + project)	Significant Impact?
VT per Capita	>22.6	8.2	No
VT per Capita	>2.8	1.4	No
Proximity and Quality of Bicycle Network	<31.7%	32.0	No
Proximity and Quality of Transit Network	<66.6%	66.8	No
Pedestrian Accessibility	<3.9	3.9	No

The TDF model calculation results indicate that the project does not exceed any of the adopted CEQA thresholds of significance.

Instead of identifying the areas of significant impact, the report concludes that both the Project and Project with Building A Residential/Commercial do not exceed any of the CEQA thresholds of significance. Not only is this misleading to the decision-makers, but the conclusion is not supported by substantial evidence. The EIR should reflect that there is a significant impact for two of the transportation performance metrics for both the Project and Project with Building A Residential/Commercial.

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## Conclusion

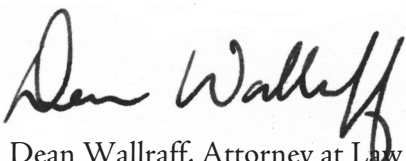
For the reasons given in this letter, the city should update the DEIR to remedy the defects we have identified. Notably, the City should have concluded that the Affinity Project would contribute to a significant GHG impact because it is not consistent with an applicable plan. Therefore, the EIR is required to include all feasible mitigation to reduce the GHG impact to less-than-significant levels, as required by CEQA.

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Also, please add Advocates for the Environment to your list of interested parties so that we may be notified of further action regarding the Affinity Project.

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Sincerely,



Dean Wallraff, Attorney at Law  
Executive Director, Advocates for the Environment

## MEMORANDUM

July 6, 2022

**To:**

Jason Van Patten  
City of Pasadena  
Planning and Community Development Department

**From:**

Jillian Neary  
Tin Cheung

**Subject:** Response to Comments Received After End of Draft EIR Public Review Period (2 of 2)

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The following presents responses to comments on the Affinity Project Draft Environmental Impact Report (EIR) submitted to the City of Pasadena Planning Commission by Lozeau Drury LLP on behalf of Supporters Alliance for Environmental Responsibility (SAFER), in a letter dated June 8, 2022 (Attachment A). Lozeau Drury LLP previously submitted comments on the Draft EIR on behalf of SAFER in a letter dated March 2, 2022 (Attachment B), and these comments have been responded to in the Final EIR. SAFER is an organization associated with the Southern California District Council of Laborers, a chartered council of the Laborers International Union of North America (LiUNA). The letter focuses on air quality, including indoor air quality, and greenhouse gas (GHG) emissions. The comment letter includes unsubstantiated statements regarding the adequacy of the air quality and GHG emissions modeling and that the indoor air quality of the proposed buildings would result in a health risk. It should be noted that the South Coast Air Quality Management District (SCAQMD), the agency with jurisdiction over the issues identified in the SAFER letter, received the Initial Study and Notice of Preparation (IS/NOP) and the Notice of Availability of the Draft EIR. SCAQMD did not provide comments on the Project as a result of review of the IS/NOP or Draft EIR, and as such did not raise questions about the methodology and assumptions used in the quantification of emissions.

The 45-day public comment period for the Affinity Draft EIR closed on March 3, 2022. There is no requirement in the California Environmental Quality Act (CEQA) that the City of Pasadena (City) respond to comments submitted after the close of the 45-day CEQA comment period. However, in the interest of full disclosure and public participation, the City responds herein. This comment letter and its exhibits have been divided into sequential numbered comments and are attached, and corresponding City of Pasadena responses are provided below. It is noted that in all instances, except where noted, “Project” refers to both the Project and Project with Building A Residential/Commercial.

**Supporters Alliance for Environmental Responsibility (via Lozeau Drury LLP)**  
**June 8, 2022**

**Response 1.** As addressed in Responses 9 through 20 below, there is no evidence to support the assertion that the Draft EIR “fails as an information document” and “fails to impose all feasible mitigation measures”. No revisions to the Draft EIR are warranted and a Recirculated EIR is not necessary.

**Response 2.** The comment provides the names of the preparers of Exhibits A and B to the comment letter and is acknowledged.

**Response 3.** The comment provides a summary of the Project and is acknowledged.

**Response 4.** The comment presents the legal background asserted by the commenter as related to the Draft EIR and comments provided thereon and is acknowledged.



Jason Van Patten  
July 6, 2022  
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**Response 5.** As addressed in Responses 9 through 17 below, there is no evidence to support the assertion that the Draft EIR’s air quality and GHG emissions analyses are based on unsubstantiated and/or inaccurate data and that the Project may therefore result in significant air quality and GHG emissions. Based on the thorough analysis conducted, there would be less than significant impacts related to air quality and GHG emissions; and no mitigation measures are required. No revisions to the Draft EIR are warranted.

**Response 6.** As addressed in Response 20 below, there is no evidence to support the assertion that operation of the Project would expose people to a significant health risk related to indoor air quality from formaldehyde in building materials. Even if the assertions regarding the health risk of future residents and visitors to the Project had merit, this does not represent an impact of the Project on the environment and as such is not relevant to the CEQA process. No revisions to the Draft EIR are warranted.

**Response 7.** As addressed in Responses 9 through 20 below, there is no evidence to support the assertion that the Draft EIR “is wholly inadequate” and no revisions to the Draft EIR are warranted. There is no factual basis provided in the SAFER comment letter upon which the Planning Commission should refrain from recommending certification of the EIR or recommending approval of the Project. Regardless, the comment is noted for the administrative record and will be provided to the decision-makers for review and consideration.

#### Comment Letter Exhibit A (SWAPE)

The following are responses to comments provided by Soil/Water/Air Protection Enterprise (SWAPE) for the Project and provided as Exhibit A to the SAFER comment letter.

**Response 8.** As addressed in Responses 9 through 19 below, there is no evidence to support the assertion that the Draft EIR’s analysis of air quality and GHG emissions is inadequate and that mitigation measures for significant environmental impacts are required. No revisions to the Draft EIR are warranted.

**Response 9.** The commenter is correct in that CalEEMod provides default model inputs that can be used if more accurate or project-specific information is not available. The default model inputs were developed based on a set of information that may or may not be representative of any given project. As such, the SCAQMD allows users to modify these computer model inputs if there is better available data that is more representative of any given project and, in fact, it is the industry standard to modify the inputs to match the specifics of the project being evaluated, more accurately.

The commenter lists a number of these modified inputs as examples of unsubstantiated inputs. The comment states that the architectural coating phase length is unsubstantiated. That is incorrect.

The CalEEMod default assumption was that the entire Project site would be painted in 10 days. The default model inputs assumes that the following surface areas would be painted:

1. 373,361 square feet of interior residential uses
2. 124,454 square feet of exterior residential uses
3. 231,000 square feet of interior nonresidential uses
4. 77,000 square feet of exterior nonresidential uses

This results in a total surface area of 805,815 square feet to be painted, which has an average of 80,582 square feet of surface area painted every day. To provide context as to the magnitude of that rate of painting, Appendix A of the CalEEMod Manual states that “The program assumes the total surface for painting

Jason Van Patten  
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equals 2.7 times the floor square footage for residential ...” For a hypothetical 2,000-square-foot residence, there would be 5,400 square feet of painted surface area. The rate of painting of 80,582 square feet per day, assumed as a default rate of painting in CalEEMod, is equivalent to painting approximately 15 houses per day every day or painting over 1 house per hour. As such, the assumption that the entirety of the Project would be painted in 10 days is clearly unreasonable. Consequently, information from the data request submitted to the Applicant related to anticipated construction phase durations was used. The data request that was developed specifically for this Project anticipated that it would take 2 months or 53 days (at a rate of 6 days/week) for the application of architectural coatings. The use of 53 days for the architectural coating phase would still require 15,204 square feet of surfaces to be painted per day, which is still a substantial rate of painting and equivalent to painting 3 houses per day. As such, the change from the model’s default of 10 days of painting to 53 days for the totality of the Project is substantiated by information provided by the Applicant, warranted, and remains a conservative estimate of potential paint-related volatile organic compound (VOC) emissions.

**Response 10.** The comment mentions that the methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>), and nitrous oxide (N<sub>2</sub>O) intensity factors related to GHG emission rates for Pasadena Water and Power (PWP) were unsubstantiated. Collectively, these intensity factors can be referred to as GHG intensity factors, which represent the amount of emissions that are produced from the generation of electricity that would be supplied to the Project. The emissions resulting from electricity generation are a mixture of fossil fuel and nonpolluting renewable energy sources. To minimize the State of California’s contribution toward climate change, California has mandated—through the Renewable Portfolio Standards (RPS)—that electricity generators progressively include nonpolluting renewable energy sources such that electricity generation is carbon free by the year 2045. The RPS was established in 2002 by Senate Bill (SB) 1078 with the initial requirement that 20 percent of electricity retail sales must be served by renewable resources by 2017. Under SB 350 (de León 2015), there is a mandated 50 percent RPS by 2030. SB 100 (de León 2018) was signed into law, which again increases the RPS to 60 percent by 2030 and requires all the State’s electricity to come from carbon-free resources by 2045.

The commenter states that “...simply because the State has renewable energy goals for year 2026 does not ensure that these goals will be achieved locally on the Project site or by the Project’s specific utility company. As such, the CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O intensity factors should be based on currently achieved power mixes from Pasadena Water and Power (“PWP”), rather than future estimates based on statewide targets. As a result, we cannot verify the revised values.” As mentioned previously, the State’s RPS legally requires power generators to achieve the carbon-free goal by 2045 as well as achieve the initial and interim goals established in 2017 and 2030. Therefore, the PWP complying with this requirement is a reasonable assumption. The PWP has also demonstrated continuing progress toward meeting the requirements of the RPS. This is demonstrated in the Power Integrated Resource Plan of which the PWP’s website explicitly states, “PWP has committed to procuring 60 percent of the power the City uses from renewable energy sources such as wind, solar, geothermal, biomass, and small hydroelectric by 2030. PWP achieved an RPS of 38 percent in 2017.”<sup>1</sup> The legally binding requirement and PWP’s historic progress and planned purchases of renewable energy demonstrates that these goals will be achieved and forms the basis for the use of an interim GHG intensity factor for the operations phase of the Project.

The comment also mentions that the GHG intensity factor was not substantiated. It should be noted that the modeling data did substantiate the CO<sub>2</sub> Intensity Factor, by stating that it was calculated for the year 2026 and based on the 2020 data as well as providing the source of the information. This information can be

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<sup>1</sup> Pasadena Water and Power – A Sustainable Future. Accessed 6-24-22. <https://ww5.cityofpasadena.net/water-and-power/sustainability/>.

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found on pages 53-54, 87-88, and 122 of Draft EIR Appendix B. Further, the CO<sub>2</sub> Intensity factor from PWP was given with the following website link provided as part of the substantiation in Appendix B: <https://ww5.cityofpasadena.net/water-and-power/wp-content/uploads/sites/54/2021/08/2020-Power-Content-Label-for-Website.pdf>.

The CO<sub>2</sub> Intensity Factor that was used in the Draft EIR is 802 pounds per megawatt-hour (lbs/MWh) for the Project buildout year of 2026; and the CalEEMod default was 873 lbs/MWh for the year 2021. This slight reduction in rates was based on reductions anticipated to occur due to the RPS by the buildout of the Project in 2026. Use of a 2021 GHG intensity rate for the year 2026 ignores the requirement of the RPS that GHG emissions for utilities are mandated to be reduced to reach the interim targets. Additionally, the latest CalEEMod model<sup>2</sup> has a substantially reduced GHG CO<sub>2</sub> intensity factor of 69 lb/MWh, which is based on the 2021 Integrated Resource Plan (IRP). This emission rate has been verified by the CalEEMod development team who mentioned that the data was provided by PWP in March 2021<sup>3</sup>. This information is also shown in a chart within the 2021 IRP<sup>4</sup>. This CO<sub>2</sub> intensity factor of 69 lb/MWh for the Project buildout year of 2026 is only 9 percent of what was used in the Draft EIR. As such, use of the default data in the latest version of CalEEMod would yield a substantial reduction in GHG emissions as compared to the conservative results provided in the Draft EIR.

The commenter also mentioned “First, unbundled RECs [renewable energy certificates] are sold separately from the physical electricity and are a voluntary purchase. Thus, as the Draft EIR and associated documents fail to mention or formally require the Project to purchase unbundled RECs, we cannot verify the 8 percent reduction to the CO<sub>2</sub> intensity factor included in the model.” According to the U.S. Environmental Protection Agency (USEPA), a REC represents the attributes of one MWh of renewable electricity that is generated and delivered to the grid. RECs are used to track and assign ownership to renewable electricity generation and use. The term unbundled REC means the non-physical REC has been separated from the physical electricity.<sup>5</sup> PWP has various options for meeting the requirements of the RPS. RECs are one method to achieve the RPS targets. It is irrelevant whether RECs are a voluntary purchase or not, or whether PWP obtains RECs at all. PWP, not the Applicant, is responsible for determining and implementing the means by which the RPS requirements will be achieved. As such, the Draft EIR does not need to “mention or formally require the Project to purchase unbundled RECs...”

The last comment provided regarding the GHG intensity factor states “Third, the Draft EIR and associated documents fails to justify the 100 percent reductions to the CH<sub>4</sub> and N<sub>2</sub>O intensity factors.” The commenter is correct in that adjustment to the CalEEMod modeling had input zeros for the CH<sub>4</sub> and N<sub>2</sub>O intensity factors. That was done because the CO<sub>2</sub> intensity factor was adjusted to be CO<sub>2</sub> equivalent. CO<sub>2</sub> equivalents are used to provide a single simplified number which accounts for all greenhouse gases, such as CH<sub>4</sub> and N<sub>2</sub>O, emitted by a source. Since the PWP power content label provides units in CO<sub>2</sub> equivalents per megawatt-hour (CO<sub>2</sub>e/MWh), it was appropriate to change the CalEEMod input for CO<sub>2</sub> to a CO<sub>2</sub> equivalent and, subsequently, zero out the CH<sub>4</sub> and N<sub>2</sub>O intensity factor inputs to avoid double counting such emissions.

**Response 11.** The comment states that the Draft EIR underestimated the number of building construction hauling trips. The comment further states that according to the Draft EIR, “Building construction, including

<sup>2</sup> CalEEMod web-based model. <https://caleemod.com/>

<sup>3</sup> Email correspondence with [caleemod@airquality.org](mailto:caleemod@airquality.org). June 28, 2022.

<sup>4</sup> Pasadena Water & Power Integrated Resource Plan (Power) 2021 Update. [https://ww5.cityofpasadena.net/water-and-power/wp-content/uploads/sites/54/2022/03/2021-Power-IRP-Update-Final-Report\\_-CC-Adopted-1-31-22.pdf](https://ww5.cityofpasadena.net/water-and-power/wp-content/uploads/sites/54/2022/03/2021-Power-IRP-Update-Final-Report_-CC-Adopted-1-31-22.pdf).

<sup>5</sup> EPA website. June 29, 2022. <https://www.epa.gov/green-power-markets/renewable-energy-certificates-recs>.

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architectural coatings would generate a waste stream requiring an estimated 795 one-way truck trips over the course of 26.5 months (691 workdays)” (p. 2-13).’ The comment highlights that there are zero hauling trip numbers in the CalEEMod output.

Vendor trips bring building supplies to a Project site. The CalEEMod modeling output in the Draft EIR included a more conservative 6 vendor trips per day over the course of 640 workdays. This equals to 3,840 truck trips over the course of the building construction period, which greatly exceeds the 795 one-way truck trips stated in the Draft EIR. Vendor trips are composed of a 50/50 percent mix of heavy-heavy duty trucks and medium-heavy duty trucks based on the CalEEMod User’s Guide. As such, the comment that the Draft EIR had failed to sufficiently account for truck emissions associated with building construction activities is incorrect. Hauling trips associated with the building construction phase are more than accounted for in the number of vendor trips (3,860 trips) and in resulting emissions as vendor trips have a 50/50 heavy-heavy and medium-heavy trips, thus explaining the zero entries on the chart referenced by the comment.

**Response 12.** The comment mentions that the number of workers and vendor trips were not substantiated in the CalEEMod model. The worker trips and vendor trips were calculated for the building construction and architectural coating phases to replace an error within the CalEEMod model that overestimates the vehicle trips for the building construction and architectural coating phases. The default trip assumptions for these phases estimates that there would be 354 worker trips and 113 vendor truck trips for the building construction phase as well as 71 worker trips for the architectural coating phase. These are one-way trips so there would be 56 vendor trucks bringing building materials every single day for 640 workdays. That would result in a total of 35,840 truckloads of building materials over the course of the building construction phase. This magnitude of truck trips provided as a default value within CalEEMod is not reasonable and to correct this error within CalEEMod, vendor and worker were quantified based on CalEEMod guidance documents for worker and vendor trip rates provided in Appendix A of the CalEEMod Manual. If one calculates the number of worker trips and vendor trips for the building construction and architectural coating phases consistent with these published values, it differs substantially from the model defaults and provides a more reasonable estimate of trips. As such, the Draft EIR properly accounted for the number of worker and vendor trips as well as resulting emissions associated with the Project.

**Response 13.** The commenter mentioned that “However, while the TIA [transportation impact analysis] discusses Vehicle Miles Traveled [VMT] per service population (population + jobs), or VMT per capita, the TIA fails to discuss the Project’s expected total VMT (accounting for all vehicle trips).” This statement is incorrect. The total VMT is provided within electronic page 17 of the “Transportation Impact Analysis CEQA Evaluation Category 2”. This total VMT was used to calculate the average trip length for the Project.

The commenter also mentioned that there is an unsubstantiated reduction in operational vehicle trip lengths. It should be noted that the trip lengths’ source information—City of Pasadena—was provided within the Draft EIR. Specifically, the VMT of 21,912 was provided by the TIA. VMT is calculated by multiplying the number of vehicle trips by the trip length. Based on this equation, the trip length can be derived by the following formula: VMT divided by vehicle trips equals trip length. As such, the 21,912 VMT was divided by 6,366 trips, which is also found in the City’s traffic analysis (Appendix G-1 Transportation Impact Analysis/CEQA Evaluation for Project) that was included as part of the Draft EIR. As such, the use of the custom trip length in the air quality analysis was calculated based on data provided within the Draft EIR and is specific to the Project.

**Response 14.** The comment states that the Draft EIR underestimated the number of weekend vehicle trips and should have used 6,366 daily trips. This contention is inaccurate because as shown in the comment itself, 6,367 daily trips was used for the weekdays. The CalEEMod trip totals is 1 trip higher due to

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rounding. The use of the same 6,367 daily trips for the weekend would be inaccurate because the commenter did not consider that certain land uses have different trip rates for weekdays versus weekends. An example of this is the Project's medical office buildings, which would typically be open weekdays and not weekends. As such, daily trips during the weekdays would be substantially higher as compared to Saturday and Sunday. This difference in weekday and weekend trip ends is reflected in daily trip rates provided in CalEEMod as part of the default trip data. This same approach was used in the calculation of Project-related weekend trips for the Draft EIR. Weekday trips are based on the daily trips for each land use provided within the City's traffic analysis. To calculate trip rates for the weekend, the proportion of weekday to weekend trips for each Project land use found within CalEEMod's default data was used. That same proportion of weekday to weekend trips was multiplied with the Project's weekday trips for each land use. As such, the methodology used to estimate the Project's weekend trips is consistent with the approach taken within CalEEMod and the commenter's assertion that the weekend trips is underestimated is inaccurate.

**Response 15.** This comment states that the changes in the operational vehicle fleet mix percentages from the default values used in CalEEMod are unsubstantiated. The vehicle fleet mix is the percentage of motorcycles, motorhomes, buses, light duty automobiles, medium duty trucks and heavy duty (i.e., semi) trucks that are anticipated to visit the Project. The Draft EIR modeling adjusted the vehicle fleet mix to approximate a vehicle fleet that would realistically visit the Project site. CalEEMod does not adjust the vehicle fleet mix based on the type of land use. As such, a single-family residential tract would generate the same percentage of heavy-duty trucks as a warehouse distribution center. If the default vehicle fleet mix percentages were used, the Project would generate 314 heavy duty truck trips per day. The proposed uses would not generate this magnitude of heavy-duty truck trips per day to support its operations. Instead, a conservative but more realistic assumption that 23 heavy duty trucks and 448 medium duty trucks would visit the Project site daily was used in the modeling. Because the default vehicle fleet mix percentages would not accurately represent the Project's trips, a more reasonable vehicle fleet mix and its resulting emissions was used in the Draft EIR.

**Response 16.** The commenter provided their own estimate of air quality emissions based on generalized default data. In this estimate, the only exceedance of the SCAQMD's threshold that was identified by SWAPE is VOC emissions. All other pollutants were below the thresholds despite the comments asserting:

- Underestimation of worker and vendor trips during construction,
- Underestimation of haul truck trips during construction,
- Unsubstantiated Reduction to Operational Vehicle Trip Lengths,
- Underestimated Number of Saturday and Sunday Vehicle Trips, and
- Unsubstantiated Changes to Operational Vehicle Fleet Mix Percentages.

As such, these previous comments have no bearing on the significance finding on the level of impact within the Draft EIR and would still result in less than significant air quality impacts. For VOC emissions, these emissions are primarily due to the application of architectural coatings. Response 9, above, provides the justification for the use of a reasonable and Project-specific architectural coating duration and explains why the architectural coating phase length applied by SWAPE is not reasonable. As discussed in this response, the Draft EIR provided a Project-specific, conservative, and reasonable estimate for the number of days needed to paint the totality of the Project.

**Response 17.** The comment states that the Draft EIR's GHG analysis and related impact finding is incorrect because (1) the Draft EIR's quantitative GHG analysis relies upon an incorrect and unsubstantiated air



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model, and (2) SWAPE's analysis indicates a potentially significant GHG impact. However, as demonstrated in Responses 9 through 16, above, all assertions made by SWAPE regarding the adjustments made to the default CalEEMod inputs and the GHG intensity factor applied are incorrect and unsupported. Accordingly, the commenter's assertion that the Draft EIR's GHG analysis and conclusions are inadequate for the reasons cited above, is also incorrect and unsupported.

**Response 18.** As addressed in Responses 9 through 17, above, there is no evidence to support the assertion that there would be "potentially significant air quality and GHG impacts that should be mitigated further". There would be less than significant impacts related to air quality and GHG emissions; no changes to the air quality or GHG emissions analysis are necessary, and no mitigation measures are required. No revisions to the Draft EIR are warranted.

**Response 19.** The comment provides a disclaimer regarding SWAPE's commentary. Specifically, that the comments are based on limited data and "may contain information gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties". This comment is acknowledged.

#### Comment Letter Exhibit B (IEE)

The following are responses to comments provided by Indoor Environmental Engineering (IEE) for the Project and provided as Exhibit B to the SAFER comment letter.

**Response 20.** The comment asserts the residents and employees of the Project would be exposed to a cancer risk associated with the formaldehyde found in some building materials and poor ventilation in the buildings; and that outdoor concentrations of PM2.5 (particulate matter less than 2.5 microns in diameter) due to tailpipe emissions will exceed California and federal standards, thus warranting high efficiency air filters be installed in the buildings. Additionally, the comment asserts that traffic noise will be higher than measured at the site, thus warranting a mechanical supply of outdoor ventilation to "allow for a habitable interior environment with closed windows and doors".

Regardless of the merit of these assertions, which is discussed further below, the air quality experienced inside the proposed buildings does not represent an impact of the Project on the environment nor an exacerbation of an existing impact. The California Supreme Court has established that, as a general matter, CEQA does not require that the effects of environmental conditions upon a project's future residents or users be considered. Two qualifications to this general rule apply where: (1) the legislature has specifically required consideration of the effects of the environment on future residents and users of a project and (2) the Project may exacerbate existing environmental hazards. These qualifications allow that where future occupants may exacerbate existing hazardous conditions, such as those found on official maps and land use plans (e.g., floodplains, coastlines, wildfire risk areas, airports), on the site of a proposed development, they may be assessed under CEQA as a potential environmental impact of that project. The exposure to indoor air contaminants due to the building materials of the project itself or the existing PM2.5 concentrations in the area do not fall into the category of an existing hazard on a site. Accordingly, as stated above, the Project's indoor air quality is not a legitimate environmental impact that is appropriate to address in the Draft EIR nor does the Project exacerbate an existing impact. Therefore, these assertions are irrelevant to the CEQA process; and commenter's assertions that IEE's commentary represents a new significant environmental impact that is not addressed in the Draft EIR, thereby rendering the EIR inadequate, are unsupported by the requirements of CEQA and the State CEQA Guidelines as well as case law (*Baird v. County of Contra Costa*, 32 Cal.App.4th 1464; *California Building Industry Association v Bay Area Air Quality Management District* [S213478, December 17, 2015]).

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The Project would be built to meet the current California Building Code (CBC) and California Green Building Code (CALGreen) standards in effect when the building permits are issued by the City of Pasadena. The City has adopted by reference the 2019 CBC and 2019 CALGreen code, among other codes, in Chapter 14.04 of the Pasadena Municipal Code. The 2019 CALGreen code has mandatory measures for both residential and non-residential land uses specifying formaldehyde limits for composite wood products (Sections 4.504.5 and 5.504.5 of the 2019 CALGreen code). Specifically, “Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB’s Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5”. The Air Toxics Control Measure (ATCM) referenced in CALGreen is the California Air Resources Board’s (CARB) Phase 2 ATCM as referenced in the comment letter. The California Composite Wood Products Regulation (CWP Regulation), which first took effect in 2009 and requires hardwood plywood (HWPW), particleboard (PB), and medium density fiberboard (MDF) to comply with regulatory requirements (at present the Phase 2 ATCM) and to be labeled as such. The California Environmental Protection Agency (CalEPA) states that the CWP Regulation’s emission standards are set at low levels intended to protect public health, and that prior to the CWP Regulation’s emission standards are set at low levels intended to protect public health.<sup>6</sup> Further, the USEPA has established the Formaldehyde Emission Standards for Composite Wood Products final rule pursuant to Title VI of the Toxic Substances Control Act (TSCA). The rule requires all composite wood panels manufactured in or imported into the United States after March 22, 2019, must be TSCA Title VI compliant and the label on composite wood panels must include the panel producer’s name, lot number, an USEPA-recognized TSCA Title VI Third-Party Certifier number, and a TSCA Title VI compliance statement.<sup>7</sup> The USEPA rule is not addressed in commenter’s letter.

The commenter’s overall assertion is that the Project will cause a significant cancer risk to future residents and employees, under the certain, specified conditions described in IEE’s letter. Specifically, on page 2 of 19 of the IEE letter, commenter states “The CEQA significance threshold for airborne cancer risk is 10 per million, as established by the South Coast Air Quality Management District (SCAQMD, 2015).” In the remainder of the letter there is reference to a “CEQA cancer risk of 10 per million”. There is no such thing as a “CEQA cancer risk” or other quantitative health risk that is codified in CEQA or the State CEQA Guidelines. According to the SCAQMD *CEQA Handbook*, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact: (1) If the Maximum Incremental Cancer Risk is 10 in one million or greater, or (2) Toxic air contaminants from the proposed Project would result in a Hazard Index increase of 1 or greater. This comment language improperly and inaccurately conflates two entirely separate regulatory bodies.

According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to toxic air contaminant (TAC) concentrations over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment method. In California, the “cancer risk” espoused in the commenter’s letter is determined by conducting a health risk assessment (HRA) pursuant to the California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual*. A full-fledged HRA is prepared using dispersion modeling and with methodology consistent with the

<sup>6</sup> California Environmental Protection Agency. Last accessed June 29, 2022. Reducing Formaldehyde Emissions from Composite Wood Products. [Frequently Asked Questions for Consumers \(ca.gov\)](https://www.ca.gov/frequently-asked-questions-for-consumers).

<sup>7</sup> U.S. Environmental Protection Agency. Last updated April 4, 2022. [Frequent Questions for Consumers about the Formaldehyde Standards for Composite Wood Products Act | US EPA](https://www.epa.gov/formaldehyde-standards-composite-wood-products-act).

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requirements of the California Office of Environmental Health Hazard Assessment, not solely arithmetic using unproven and convenient, hypothetical assumptions. An OEHHA-compliant HRA is far more complicated and nuanced than the narrative provided in Exhibit B. Furthermore, the OEHHA has defined only non-cancer reference exposure levels for formaldehyde; which refers to adverse health effects such as eye and respiratory irritation. The commenter's letter is based on unsupported assumptions and faulty inferences to suggest that all persons living or working inside any building using composite wood materials will be exposed to a high risk of cancer from formaldehyde and/or poor air ventilation. No direct evidence of this assertion is provided; nor is substantial evidence provided that the CARB, CalEPA, and USEPA regulations are not adequately protective of the future population.

Regarding outdoor noise levels, it is not accurate (nor factually supported) to say that "post-pandemic sound levels will be higher". Due to the logarithmic nature of the decibel unit used to measure noise levels, a doubling of a noise source would result in a 3 dBA increase in the noise level, which is considered barely perceptible to human hearing. While there will be more traffic than when the noise levels were taken, it is unlikely to be double. And even in this worst case event, the perceived noise level would be minimally changed, if at all. This fact was considered in the decision to take short- and long-term noise measurements during pandemic conditions as the baseline for the Project's noise analysis. As such, there is no validity to this argument to support a specific infrastructure for air exchange in the proposed buildings.

Regarding outdoor concentrations of PM<sub>2.5</sub>, as a criteria air quality pollutant, the air quality analysis presented in Section 3.1, Air Quality, of the Draft EIR quantified the regional and local emissions of PM<sub>2.5</sub> during construction and operation of the Project. As indicated in Section 3.1, there would be less than significant air quality impacts from construction and operation of the Project and no mitigation is required. As such, there is no validity to this argument to support a specific infrastructure for air exchange in the proposed buildings.





## ATTACHMENT A

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*Via Email*

June 8, 2022

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Jason Lyon, Vice Chair  
David Coher, Representative  
Julianna Delgado, Representative  
Lambert Giessinger, Representative  
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**Re: Comment on Final Environmental Impact Report, Affinity Project  
(SCH 2021080103) (aka Planned Development #39)  
Planning Commission, June 8, 2022, Agenda Item 7**

Dear Chair Olivas and Honorable Members of the Planning Commission:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") regarding the Final Environmental Impact Report ("FEIR") prepared for the Affinity Project (SCH 2021080103), including all actions related or referring to the proposed construction of a 154,000 square foot, seven-story medical office building with ground-floor commercial uses, and a 184,376 square foot, seven-story assisted living building with 85,800 square feet of assisted living uses and 98,576 square feet of independent living uses, with five subterranean parking levels providing up to 850 parking spaces, located on an approximately 3.3 acre site between 465 and 577 South Arroyo Parkway in the City of Pasadena ("Project").

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After reviewing the FEIR, we conclude that the FEIR fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. SAFER requests that the Planning Commission address these

shortcomings in a revised environmental impact report (“REIR”) and recirculate the REIR prior to considering approvals for the Project.

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This comment has been prepared with the assistance of environmental consulting firm Soil/Water/Air Protection Enterprise (“SWAPE”) (Exhibit A) and indoor air quality expert Francis “Bud” Offermann (Exhibit B). We incorporate the SWAPE and Offermann comments herein by reference.

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## **I. Project Description.**

The Project is located on an approximately 3.3-acre site located between 465 and 577 South Arroyo Parkway, bound by East Bellevue Drive on the north, South Arroyo Parkway on the east, East California Boulevard on the south, and the Metro Gold Line on the west. The Project will require demolition of six existing buildings totaling 45,912 sf and will include construction of two new buildings:

- Building A: a 154,000 sf, 7-story medical office building with ground-floor commercial uses; and
- Building B: a 184,376 sf, 7-story assisted living building with 85,800 sf of assisted living uses and 98,576 sf of independent living uses including up to 95 one- and two-bedroom senior housing units.

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The Project will also include a total of five levels of subterranean parking spanning both proposed buildings. The site is currently zoned as “High Mixed-Use” in the general plan, and the Project will require rezoning from CD-6 to a Planned Development Zone.

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## **II. Legal Background.**

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an environmental impact report (“EIR”) (except in certain limited circumstances). *See, e.g.* Pub. Res. Code § 21100. The EIR is the very heart of CEQA. *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652. “The ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” *Communities for a Better Environment v. Calif. Resources Agency* (2002) 103 Cal. App. 4th 98, 109.

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CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project. 14 Cal. Code Regs. (“CEQA Guidelines”) § 15002(a)(1). “Its purpose is to

inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR ‘protects not only the environment but also informed self-government.’” *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564. The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.” *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm’rs.* (2001) 91 Cal. App. 4th 1344, 1354 (“*Berkeley Jets*”); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

Second, CEQA requires public agencies to avoid or reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and all feasible mitigation measures. CEQA Guidelines § 15002(a)(2) and (3); *see also*, *Berkeley Jets*, 91 Cal.App.4th at pp. 1344, 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564. The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines §15002(a)(2). If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns.” Pub. Res. Code § 21081; 14 Cal.Code Regs. § 15092(b)(2)(A) & (B). The lead agency may deem a particular impact to be insignificant only if it produces rigorous analysis and concrete substantial evidence justifying the finding. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 732.

4 cont

While the courts review an EIR using an “abuse of discretion” standard, “the reviewing court is not to ‘uncritically rely on every study or analysis presented by a project proponent in support of its position. A ‘clearly inadequate or unsupported study is entitled to no judicial deference.’” *Berkeley Jets*, 91 Cal. App. 4th at p. 1355 (emphasis added) (quoting *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 391 409, fn. 12). As the court stated in *Berkeley Jets*:

A prejudicial abuse of discretion occurs “if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process.” (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal. App. 4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal. App. 4th 931, 946.)

More recently, the California Supreme Court has emphasized that:

When reviewing whether a discussion is sufficient to satisfy CEQA, a court must be satisfied that the EIR (1) includes sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises [citation omitted], and (2) makes a reasonable effort to substantively connect a project's air quality impacts to likely health consequences.

*Sierra Club v. Cty. of Fresno* (2018) 6 Cal.5th 502, 510 (2018), citing *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 405. “Whether or not the alleged inadequacy is the complete omission of a required discussion or a patently inadequate one-paragraph discussion devoid of analysis, the reviewing court must decide whether the EIR serves its purpose as an informational document.” *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516. Although an agency has discretion to decide the manner of discussing potentially significant effects in an EIR, “a reviewing court must determine whether the discussion of a potentially significant effect is sufficient or insufficient, i.e., whether the EIR comports with its intended function of including ‘detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.’” 6 Cal.5th at 516, citing *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197. “The determination whether a discussion is sufficient is not solely a matter of discerning whether there is substantial evidence to support the agency’s factual conclusions.” 6 Cal.5th at 516. Whether a discussion of a potential impact is sufficient “presents a mixed question of law and fact. As such, it is generally subject to independent review. However, underlying factual determinations—including, for example, an agency’s decision as to which methodologies to employ for analyzing an environmental effect—may warrant deference.” *Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 516. As the Court emphasized:

4 cont

[W]hether a description of an environmental impact is insufficient because it lacks analysis or omits the magnitude of the impact is not a substantial evidence question. A conclusory discussion of an environmental impact that an EIR deems significant can be determined by a court to be inadequate as an informational document without reference to substantial evidence.

*Sierra Club v. Cty. of Fresno*, 6 Cal.5th at 514. We find that the FEIR prepared by the City here is inadequate for the reasons set forth below.

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## I. DISCUSSION

### A. There is Substantial Evidence that the Project Will Have Significant Adverse Impacts Regarding Air Quality and Greenhouse Gases.

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Matt Hagemann, P.G., C.Hg., and Dr. Paul E. Rosenfeld, Ph.D., of the environmental consulting firm SWAPE reviewed the EIR's analysis of the Project's impacts on air quality and greenhouse gases. SWAPE's comment letter and CVs are attached as Exhibit A and their comments are briefly summarized here.

**1. The DEIR Relied on Unsubstantiated Input Parameters to Estimate Project Emissions and Thus the Project May Result in Significant Air Quality Impacts.**

SWAPE found that the EIR incorrectly estimated the Project's constructional and operational emissions and therefore cannot be relied upon to determine the significance of the Project's impacts on local and regional air quality. The EIR relies on emissions calculated from the California Emissions Estimator Version CalEEMod 2020.4.0 ("CalEEMod"). DEIR, p. 3.1-12. This model, which is used to generate a project's construction and operational emissions, relies on recommended default values based on site specific information related to a number of factors. Ex. A, p. 1. CEQA requires any changes to the default values to be justified by substantial evidence. *Id.*

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SWAPE reviewed the EIR's CalEEMod output files and found that several of the values input into the model were inconsistent with information provided in the EIR. Ex. A at 2. Specifically, SWAPE found that the following values used in the EIR's air quality analysis were either inconsistent with information provided in the EIR or otherwise unjustified:

1. Unsubstantiated change to architectural coating phase length. Ex. A, p.2-4;
2. Unsubstantiated changes to CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O intensity factors. Ex. A, p. 4-6;
3. Underestimated number of building construction hauling trips. Ex. A, p. 6-7;
4. Unsubstantiated reduction to operational vehicle trip lengths. Ex. A, p. 7-9;
5. Underestimated number of Saturday and Sunday vehicle trips. Ex. A, p. 9-10;
6. Unsubstantiated changes to operational vehicle fleet mix percentages. Ex. A, p. 10-11.

Based on the issues listed above, the EIR's analysis of air quality cannot be relied upon to determine the significance of impacts and a Revised EIR must be prepared.

**2. An Updated Air Model Analysis Found that the Project Will have a Significant Air Quality Impact.**

To more accurately determine the Project's construction and operational emissions, SWAPE prepared an updated CalEEMod model using more site-specific

information and corrected input parameters. See Ex. A, p. 11. SWAPE's updated analysis demonstrates that the Project's construction-related VOC emissions increased by approximately 423% and therefore significantly exceed the applicable SCAQMD significance thresholds. *Id.* Thus, SWAPE's model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the EIR. A Revised EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the surrounding environment.

### **3. The EIR Failed to Adequately Analyze the Project's Greenhouse Gas Impacts and Thus the Project May Result in Significant Greenhouse Gas Emissions.**

The EIR estimates that the Project would generate net annual GHG emissions of 3,380 metric tons of carbon dioxide equivalent per year ("MT CO<sub>2</sub>e/year"). DEIR, p. 3.4-16. The EIR also states that the Project would have a service population efficiency value of 3.52 metric tons of carbon dioxide equivalents per service population per year ("MTCO<sub>2</sub>e/SP/year") and would therefore not exceed the City's threshold of 3.57 MTCO<sub>2</sub>e/SP/year. *Id.*, Table 3.4-6. However, SWAPE found that the EIR's conclusion about a less-than-significant greenhouse gas impact is incorrect for two reasons:

- (1) The EIR's quantitative GHG analysis relies upon an incorrect and unsubstantiated air model.

5 cont

Due to the EIR's inputting of several inconsistent or unjustified values into its CalEEMod analysis, the EIR underestimated Project emissions. The EIR's GHG analysis is therefore also flawed, and cannot be relied upon to determine the significance of Project impacts. Ex. A, p. 12.

- (2) SWAPE's updated analysis indicates a potentially significant GHG impact.

SWAPE prepared an updated air model which resulted in CalEEMod output files indicating that the Project would generate approximately 4,873.66 MT CO<sub>2</sub>e/year of total construction emissions and approximately 10,667.49 MT CO<sub>2</sub>e/year of net annual operational emissions. Ex. A, p. 12. Based on this information, SWAPE calculated that the Project would have a service population efficiency value of 11.29 MT CO<sub>2</sub>e/SP/year, thus exceeding the City's threshold. *Id.*

SWAPE's analysis demonstrates potentially significant air quality and GHG impacts from the project that necessitate mitigation. A Revised EIR should be prepared which includes an air quality and GHG analysis and should propose feasible measures to mitigate any significant impacts.

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**B. There is a Fair Argument that the Project May Have a Significant Health Risk Impact from Indoor Air Quality Impacts.**

Certified Industrial Hygienist, Francis “Bud” Offermann, PE, CIH, has conducted a review of the proposed Project and relevant documents regarding the Project’s indoor air emissions. Indoor Environmental Engineering Comments (June 7, 2022). Mr. Offermann concludes that it is likely that the Project will expose residents and commercial employees of the Project to significant impacts related to indoor air quality, and in particular, emissions of the cancer-causing chemical formaldehyde. Mr. Offermann is a leading expert on indoor air quality and has published extensively on the topic. Mr. Offermann’s expert comments and curriculum vitae are attached as Exhibit B.

Mr. Offermann explains that many composite wood products used in building materials and furnishings commonly found in offices, warehouses, residences, and hotels contain formaldehyde-based glues which off-gas formaldehyde over a very long time period. He states, “[t]he primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.” Ex. B, p. 2-3.

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Formaldehyde is a known human carcinogen. Mr. Offermann states that future residents of the Project would be exposed to a 17 in one million cancer risk, and commercial employees of the Project would be exposed to a 17.7 in one million risk, **even assuming** all materials are compliant with the California Air Resources Board’s formaldehyde airborne toxics control measure. *Id.* at 4-5. This potential exposure level exceeds the SCAQMD CEQA significance threshold for airborne cancer risk of 10 per million.

Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings’ interiors. *Id.* at 12-13. These significant environmental impacts should be analyzed in a Revised EIR and mitigation measures should be imposed to reduce the risk of formaldehyde exposure.

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### III. CONCLUSION

For the foregoing reasons, SAFER believes that the EIR is wholly inadequate. SAFER urges the Planning Commission to refrain from recommending certification of the FEIR or recommending approval of the Project in order to allow staff additional time to address the concerns raised herein. Thank you for considering our comments and please include this letter in the record of proceedings for this project. 7

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Sincerely,

A handwritten signature in cursive script that reads "Amalia Bowley Fuentes".

Amalia Bowley Fuentes  
Lozeau Drury LLP



# EXHIBIT A



Technical Consultation, Data Analysis and  
Litigation Support for the Environment

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June 7, 2022

Amalia Bowley Fuentes  
Lozeau | Drury LLP  
1939 Harrison Street, Suite 150  
Oakland, CA 94618

**Subject: Comments on the Affinity Project (SCH No. 2021080103)**

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Dear Ms. Fuentes,

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We have reviewed the January 2022 Draft Environmental Impact Report (“DEIR”) for the Affinity Project (“Project”) located in the City of Pasadena (“City”). The Project proposes to demolish 45,912-square-feet (“SF”) of existing buildings and construct a 154,000-SF medical office building and a 184,376-SF assisted living building, as well as 850 parking spaces, on the 3.3-acre site.

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

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## Air Quality

### Unsubstantiated Input Parameters Used to Estimate Project Emissions

The DEIR’s air quality analysis relies on emissions calculated with the California Emissions Estimator Model (“CalEEMod”) Version 2020.4.0 (p. 3.1-12).<sup>1</sup> CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act (“CEQA”) requires that such changes be justified by substantial evidence.

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<sup>1</sup> “CalEEMod User’s Guide Version 2020.4.0.” California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>.

Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters are utilized in calculating the Project's air pollutant emissions and make known which default values are changed as well as provide justification for the values selected.

When reviewing the Project's CalEEMod output files, provided in the Air Quality and Greenhouse Gas Emissions Modeling Data ("AQ & GHG Analysis") as Appendix B to the DEIR, we found that several model inputs were not consistent with information disclosed in the DEIR. As a result, the Project's construction and operational emissions are underestimated. An updated EIR should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

#### *Unsubstantiated Change to Architectural Coating Phase Length*

Review of the CalEEMod output files demonstrates that the "Affinity-Proposed" model includes a manual change to the default architectural coating construction phase length (see excerpt below) (Appendix B, pp. 49, 83, 117).

9 cont

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	53.00

As a result of this change, the model includes the following construction schedule (see excerpt below) (Appendix B, pp. 59, 92, 93, 128).

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Demolition	Demolition	3/13/2023	5/27/2023	60	66
2	Site Preparation	Site Preparation	5/28/2023	6/27/2023	60	26
3	Grading	Grading	6/28/2023	10/31/2023	60	100
4	Building Construction	Building Construction	11/1/2023	11/15/2025	60	640
5	Architectural Coating	Architectural Coating	11/16/2025	1/16/2026	60	53

As demonstrated in the excerpt above, the architectural coating phase is increased by 430%, from the default value of 10 to 53 days. As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.<sup>2</sup> According to the "User Entered Comments & Non-Default Data" table, the justification provided for this change is:

"Project schedule per client" (Appendix B, pp. 48, 82, 116).

Furthermore, regarding the Project's anticipated construction schedule, the DEIR states:

<sup>2</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.agmd.gov/caleemod/user's-guide>, p. 1, 14.

“Building construction, including architectural coatings, would generate a waste stream requiring an estimated 795 one-way truck trips over the course of 26.5 months (691 workdays)” (p. 2-13).

However, the revised architectural coating phase length remains unsupported. While the DEIR indicates the duration of the combined building construction and architectural coating phases, the DEIR fails to mention or justify the individual architectural coating phase length of 10 days. This is incorrect, as according to the CalEEMod User’s Guide:

“CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA.”<sup>3</sup>

Here, as the DEIR only justifies the combined total duration of the building construction and architectural coating phases, the DEIR fails to provide substantial evidence to support the revised individual architectural coating phase length. As such, we cannot verify the change.

9 cont

This unsubstantiated change presents an issue, as the construction emissions are improperly spread out over a longer period of time for the architectural coating phase. According to the CalEEMod User’s Guide, each construction phase is associated with different emissions activities (see excerpt below).<sup>4</sup>

**Demolition** involves removing buildings or structures.

**Site Preparation** involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.

**Grading** involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.

**Building Construction** involves the construction of the foundation, structures and buildings.

**Architectural Coating** involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.

**Paving** involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

Thus, by disproportionately extending the architectural coating phase length without proper justification, the model assumes a greater number of days to complete the construction activities required by the architectural coating phase. As such, there will be fewer construction activities required per day and, consequently, less pollutants emitted per day. As a result, the model may underestimate

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<sup>3</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>, p. 13-14.

<sup>4</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>, p. 32.



the peak daily emissions associated with the architectural coating phase of construction and should not be relied upon to determine Project significance.

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#### *Unsubstantiated Changes to CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O Intensity Factors*

Review of the CalEEMod output files demonstrates that the “Affinity-Proposed” model includes changes to the default CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O intensity factors (see excerpt below) (Appendix B, pp. 53-54, 87-88, 122).

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CH4IntensityFactor	0.033	0
tblProjectCharacteristics	CO2IntensityFactor	872.98	802
tblProjectCharacteristics	N2OIntensityFactor	0.004	0

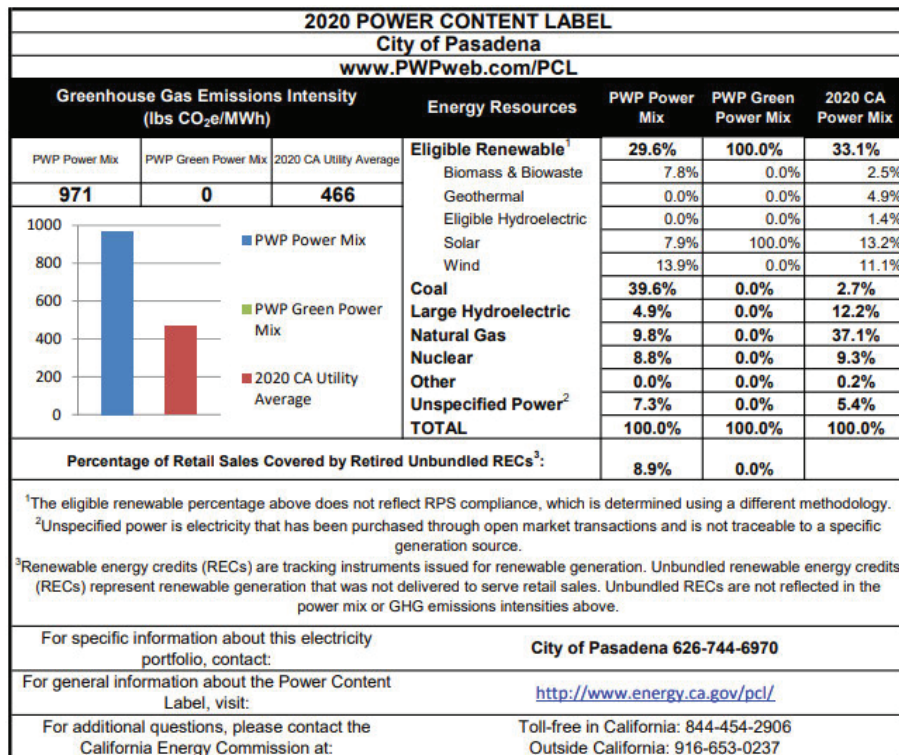
As demonstrated above, the CH<sub>4</sub> and N<sub>2</sub>O intensity factors are both reduced by 100%, from their default values of 0.033- and 0.004- to 0-pounds per megawatt hour (“lbs/MWh”), respectively; and the CO<sub>2</sub> intensity factor is reduced by approximately 8%, from a default value of 872.98- to 802-lbs/MWh. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.<sup>5</sup> According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is:

“CO2 Intensity Factor for 2026, per 2020 Power Content Label and what is legally required ”  
(Appendix B, pp. 48, 82, 116).

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Furthermore, the above-mentioned 2020 Power Content Label demonstrates that the PWP Power Mix includes 8.9% of unbundled Renewable Energy Certificates (“RECs”) (see excerpt below).

<sup>5</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.agmd.gov/caleemod/user's-guide>, p. 2, 9



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However, these changes remain unsupported for three reasons.

First, unbundled RECs are sold separately from the physical electricity and are a voluntary purchase.<sup>6</sup> Thus, as the DEIR and associated documents fail to mention or formally require the Project to purchase unbundled RECs, we cannot verify the 8% reduction to the CO<sub>2</sub> intensity factor included in the model.

Second, simply because the State has renewable energy goals for year 2026 does not ensure that these goals will be achieved locally on the Project site or by the Project's specific utility company. As such, the CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O intensity factors should be based on currently achieved power mixes from Pasadena Water and Power ("PWP"), rather than future estimates based on statewide targets. As a result, we cannot verify the revised values.

Third, the DEIR and associated documents fails to justify the 100% reductions to the CH<sub>4</sub> and N<sub>2</sub>O intensity factors. This is incorrect, as according to the CalEEMod User's Guide:

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"CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA".<sup>7</sup>

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<sup>6</sup> "Unbundle Electricity and Renewable Energy Certificates." U.S. EPA, September 2020, available at: <https://www.epa.gov/lmop/unbundle-electricity-and-renewable-energy-certificates>.

<sup>7</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>, p. 12.

Here, until the DEIR provides substantial evidence demonstrating how the City has achieved these specific intensity factors, we cannot verify the revised values.

These unsubstantiated changes present an issue, as CalEEMod uses the CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O intensity factors to calculate the Project's greenhouse gas ("GHG") emissions associated with electricity use.<sup>8</sup> Thus, by including unsubstantiated reductions to the default CH<sub>4</sub>, CO<sub>2</sub>, and N<sub>2</sub>O intensity factors, the model may underestimate the Project's GHG emissions and should not be relied upon to determine Project significance.

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### *Underestimated Number of Building Construction Hauling Trips*

According to the DEIR:

"Building construction, including architectural coatings, would generate a waste stream requiring an estimated 795 one-way truck trips over the course of 26.5 months (691 workdays)" (p. 2-13).

As demonstrated above, the proposed Project expects to generate 795 hauling trips during building construction. However, review of the CalEEMod output files demonstrates that the "Affinity-Proposed" model fails to include any building construction hauling trips (see excerpts below) (Appendix B, pp. 60, 94, 129).

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number
Demolition	4	10.00	0.00	600.00
Site Preparation	4	10.00	0.00	60.00
Grading	9	23.00	0.00	26,400.00
Building Construction	14	150.00	6.00	0.00
Architectural Coating	2	30.00	0.00	0.00

11

This omission presents an issue, as CalEEMod uses the number of hauling trips to estimate the construction-related emissions associated with on-road vehicles.<sup>9</sup> By failing to include any of the proposed 795 hauling trips required for building construction, the model underestimates the Project's construction-related emissions and should not be relied upon to determine Project significance.

### *Unsubstantiated Reductions to Number of Worker and Vendor Trips*

Review of the CalEEMod output files demonstrates that the "Affinity-Proposed" model includes several changes to the default vendor and worker trips numbers (see excerpts below) (Appendix B, pp. 54, 88, 122).

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<sup>8</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>, p. 17.

<sup>9</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user's-guide>, p. 34.



Table Name	Column Name	Default Value	New Value
tblTripsAndVMT	VendorTripNumber	113.00	6.00
tblTripsAndVMT	WorkerTripNumber	354.00	150.00
tblTripsAndVMT	WorkerTripNumber	71.00	30.00

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.<sup>10</sup> According to the "User Entered Comments & Non-Default Data" table, the justification provided for these changes is:

"Haul trips and distance per client" (Appendix B, pp. 49, 83, 117).

However, these changes remain unsupported, as the justification only references hauling trips and fails to acknowledge the number of worker and vendor trips included in the model. Furthermore, the DEIR and associated documents fail to mention or justify the revised vendor and worker trip numbers whatsoever. As such, we cannot verify the changes.

12 cont

These unsubstantiated reductions present an issue, as CalEEMod uses the vendor and worker trip numbers to estimate the construction-related emissions associated with on-road vehicles.<sup>11</sup> Thus, by including unsubstantiated changes to the default vendor and worker trip numbers, the model may underestimate the Project's mobile-source construction-related emissions and should not be relied upon to determine Project significance.

### *Unsubstantiated Reduction to Operational Vehicle Trip Lengths*

Review of the CalEEMod output files demonstrates that the "Affinity-Proposed" model includes several reductions to the default operational vehicle trip lengths (see excerpt below) (Appendix B, pp. 54-55, 88-89, 122-123).

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	CC_TL	8.40	3.44
tblVehicleTrips	CC_TL	8.40	3.44
tblVehicleTrips	CC_TL	8.40	3.44
tblVehicleTrips	CNW_TL	6.90	3.44
tblVehicleTrips	CNW_TL	6.90	3.44
tblVehicleTrips	CNW_TL	6.90	3.44
tblVehicleTrips	CW_TL	16.60	3.44
tblVehicleTrips	CW_TL	16.60	3.44
tblVehicleTrips	CW_TL	16.60	3.44

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<sup>10</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.agmd.gov/caleemod/user's-guide>, p. 1, 14.

<sup>11</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.agmd.gov/caleemod/user's-guide>, p. 34.



As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.<sup>12</sup> According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is:

“Trip rates per TIA and to account for increased trips from converted use (in high-turnover land use). trip length adjustments per Pasadena DOT CEQA study” (Appendix B, pp. 49, 83, 117).

Furthermore, the DEIR states:

“Operations phase trip generation and trip lengths were provided within the City’s traffic analysis, provided in Appendix G-1, Transportation Impact Analysis/CEQA Evaluation for Project, and Appendix G-2, Transportation Impact Analysis/CEQA Evaluation for Project with Building A Residential/Commercial” (p. 3.3-3).

However, these reductions remain unsupported for two reasons.

First, the above-mentioned Transportation Impact Analysis/CEQA Evaluation for Project (“TIA”), provided as Appendix G-1 to the DEIR, fails to provide trip lengths for the Project’s expected number of vehicle trips. Second, the TIA provides the following transportation performance metrics (see excerpt below) (p. 10, Table 4).

13 cont

**Table 4. Transportation Performance Metrics Summary**

Transportation Performance Metrics	Significant Impact Cap (existing)	Incremental change (existing + project)	Significant Impact?
VMT per Capita	>22.6	19.5	No
VT per Capita	>2.8	2.0	No
Proximity and Quality of Bicycle Network	<31.7%	32.0	No
Proximity and Quality of Transit Network	<66.6%	66.8	No
Pedestrian Accessibility	<3.9	3.9	No

However, while the TIA discusses Vehicle Miles Traveled per service population (population + jobs), or VMT per capita, the TIA fails to discuss the Project’s expected *total* VMT (accounting for all vehicle trips). Thus, we are unable to verify that the revised trip lengths included in the model are an accurate reflection of the Project’s total expected VMT.

These unsubstantiated reductions present an issue, as CalEEMod uses the vendor trip numbers to estimate the construction-related emissions associated with on-road vehicles.<sup>13</sup> By including an

<sup>12</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>, p. 1, 14.

<sup>13</sup> “CalEEMod User’s Guide.” California Air Pollution Control Officers Association (CAPCOA), May 2021, *available at*: <https://www.aqmd.gov/caleemod/user's-guide>, p. 35.

unsubstantiated reduction to vendor trips in the on-road emissions analysis, the model may underestimate the Project's mobile-source construction-related emissions and should not be relied upon to determine Project significance.

13 cont

#### *Underestimated Number of Saturday and Sunday Vehicle Trips*

According to the DEIR, the proposed Project is expected to generate 6,366 daily operational vehicle trips (see excerpt below) (p. 3.7-13).

**TABLE 3.7-5  
NET TRIP GENERATION FOR THE PROJECT**

	Daily	AM Peak Hour	PM Peak Hour
Existing Uses	2,454	189	237
Proposed Uses	6,366	515	618
<b>Net Change</b>	<b>3,913</b>	<b>326</b>	<b>381</b>
Source: Pasadena 2021a.			

As such, the Project's model should have included trip rates that reflect the estimated number of average daily vehicle trips. However, review of the CalEEMod output files demonstrates that the "Affinity-Proposed" model includes only 2,910.95 Saturday and 2,108.94 Sunday operational vehicle trips (see excerpt below) (Appendix B, pp. 76, 110, 146).

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Land Use	Average Daily Trip Rate		
	Weekday	Saturday	Sunday
Apartments Mid Rise	281.20	253.65	211.85
Congregate Care (Assisted Living)	360.34	405.92	436.88
Enclosed Parking with Elevator	0.00	0.00	0.00
High Turnover (Sit Down Restaurant)	996.39	1,087.17	1266.93
Medical Office Building	4,729.32	1,164.21	193.28
<b>Total</b>	<b>6,367.25</b>	<b>2,910.95</b>	<b>2,108.94</b>

As demonstrated above, the Saturday and Sunday vehicle trips are underestimated by 3,455.05- and 4,257.06-trips, respectively.<sup>14, 15</sup> As such, the trip rates inputted into the model are underestimated and inconsistent with the information provided by the DEIR.

These inconsistencies present an issue, as CalEEMod uses the operational vehicle trip rates to calculate the emissions associated with the operational on-road vehicles.<sup>16</sup> Thus, by including underestimated

<sup>14</sup> Calculated: 6,366 proposed daily trips – 2,910.95 modeled Saturday trips = 3,455.05 underestimated Saturday trips.

<sup>15</sup> Calculated: 6,366 proposed daily trips – 2,108.94 modeled Sunday trips = 4,257.06 underestimated Sunday trips.

<sup>16</sup> "CalEEMod User's Guide." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.agmd.gov/caleemod/user's-guide>, p. 36.



operational daily vehicle trips, the model underestimates the Project's mobile-source operational emissions and should not be relied upon to determine Project significance.

14 cont

### *Unsubstantiated Changes to Operational Vehicle Fleet Mix Percentages*

Review of the CalEEMod output files demonstrates that the "Affinity-Proposed" model includes several changes to the default operational vehicle fleet mix percentages (see excerpt below) (Appendix B, pp. 50-52, 84-86, 118-121).

Table Name	Column Name	Default Value	New Value
tbiFleetMix	MDV	0.13	0.07
tbiFleetMix	MH	3.3180e-003	3.3360e-003
tbiFleetMix	MH	3.3180e-003	3.3360e-003
tbiFleetMix	MH	3.3180e-003	3.3360e-003
tbiFleetMix	MH	3.3180e-003	3.3360e-003
tbiFleetMix	MH	3.3180e-003	3.3360e-003
tbiFleetMix	MHD	0.01	9.0500e-004
tbiFleetMix	MHD	0.01	9.0500e-004
tbiFleetMix	MHD	0.01	9.0500e-004
tbiFleetMix	MHD	0.01	9.0500e-004
tbiFleetMix	MHD	0.01	9.0500e-004
tbiFleetMix	OBUS	9.3300e-004	9.3800e-004
tbiFleetMix	OBUS	9.3300e-004	9.3800e-004

Note: the above screenshot does not capture all of the applicable changes.

As previously mentioned, the CalEEMod User's Guide requires any changes to model defaults be justified.<sup>17</sup> However, the "User Entered Comments & Non-Default Data" table fails to provide a justification for the revised operational vehicle fleet mix percentages. Furthermore, the DEIR and associated documents fail to mention the revised fleet mix percentages whatsoever. This is incorrect, as according to the CalEEMod User's Guide:

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"CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA."<sup>18</sup>

Here, as the DEIR and associated documents fail to provide substantial evidence to support the revised operational vehicle fleet mix, we cannot verify the changes.

These unsubstantiated changes present an issue, as CalEEMod uses operational vehicle fleet mix percentages to calculate the Project's operational emissions associated with on-road vehicles.<sup>19</sup> Thus, by including several unsubstantiated changes to the default operational vehicle fleet mix percentages, the

<sup>17</sup> "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user-s-guide>, p. 1, 14.

<sup>18</sup> "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user-s-guide>, p. 13-14.

<sup>19</sup> "CalEEMod User's Guide Version 2020.4.0." California Air Pollution Control Officers Association (CAPCOA), May 2021, available at: <https://www.aqmd.gov/caleemod/user-s-guide>, p. 36.

model may underestimate the Project's mobile-source operational emissions and should not be relied upon to determine Project significance. 15 cont

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### Updated Analysis Indicates a Potentially Significant Air Quality Impact

In an effort to more accurately estimate the Project's construction-related and operational emissions, we prepared an updated CalEEMod model, using the Project-specific information provided by the DEIR. In our updated model, we included the correct number of building construction hauling trips and operational Saturday and Sunday vehicle trips, as well as omitted the unsubstantiated changes to the architectural coating phase length, CH<sub>4</sub>, CO<sub>2</sub> and N<sub>2</sub>O intensity factors, worker and vendor trip numbers, operational vehicle trip lengths, and operational vehicle fleet mix percentages.<sup>20</sup>

Our updated analysis estimates that the Project's construction-related VOC emissions would exceed the applicable South Coast Air Quality Management District ("SCAQMD") threshold of 75 pounds per day ("lbs/day"), as referenced by the DEIR (p. 43.1-13, Table 3.1-5) (see table below).<sup>21</sup>

SWAPE Criteria Air Pollutant Emissions	
Construction	VOC (lbs/day)
DEIR	51.7
SWAPE	270.6
% Increase	423%
SCAQMD Threshold	75
Exceeds?	Yes

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As you can see in the table above, the Project's construction-related VOC emissions, as estimated by SWAPE, increase by approximately 423% and exceed the applicable SCAQMD significance threshold. Thus, our updated model demonstrates that the Project would result in a potentially significant air quality impact that was not previously identified or addressed in the DEIR. As a result, an updated EIR should be prepared to adequately assess and mitigate the potential air quality impacts that the Project may have on the environment.

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## Greenhouse Gas

### Failure to Adequately Evaluate Greenhouse Gas Impacts

The DEIR concludes that the Project would result in net annual greenhouse gas ("GHG") emissions of 3,380 metric tons of carbon dioxide equivalents per year ("MT CO<sub>2</sub>e/year"). Furthermore, based on a service population of 959 people, the DEIR estimates that the Project would have a service population efficiency value of 3.52 metric tons of carbon dioxide equivalents per service population per year ("MT

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<sup>20</sup> See Attachment A for updated air modeling.

<sup>21</sup> "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, April 2019, available at: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>.



CO<sub>2</sub>e/SP/year”), which would not exceed the City’s threshold of 3.57 MT CO<sub>2</sub>e/SP/year (see excerpt below) (p. 3.4-16, Table 3.4-6).

**TABLE 3.4-6  
GHG EFFICIENCY METRIC FOR THE PROJECT**

Source	Emissions
Construction Emissions (Amortized) (MTCO <sub>2</sub> e/yr)	123 <sup>a</sup>
Net Operational Emissions (MTCO <sub>2</sub> e/yr)	3,257 <sup>b</sup>
<b>Annual GHG Emissions</b>	<b>3,380</b>
Service Population	959
Project-level GHG efficiency (MTCO <sub>2</sub> e/SP/yr)	3.52
GHG Efficiency Threshold for 2026 (MTCO <sub>2</sub> e/SP/yr) <sup>c</sup>	3.57
Exceed Threshold?	No
MTCO <sub>2</sub> e/yr.: metric tons of carbon dioxide equivalent per year; SP: service person; yr: year	
<sup>a</sup> Total derived by dividing construction emissions (see Table 3.4-4) by 30.	
<sup>b</sup> Total operational emissions are the gross operational emissions with a net reduction of existing emissions (see Table 3.4-5).	
<sup>c</sup> See Table 3.4-3 for threshold for 2026.	

17 cont

However, the DEIR’s GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for two reasons.

- (1) The DEIR’s quantitative GHG analysis relies upon an incorrect and unsubstantiated air model; and
- (2) SWAPE’s updated analysis indicates a potentially significant GHG impact.

#### *1) Incorrect and Unsubstantiated Quantitative Analysis of Emissions*

As previously stated, the DEIR estimates that the Project would generate net annual GHG emissions of 3,380 MT CO<sub>2</sub>e/year (p. 3.4-16, Table 3.4-6). However, the DEIR’s quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the Project’s CalEEMod output files, provided in the AQ & GHG Analysis as Appendix B to the DEIR, we found that several of the values inputted into the model are not consistent with information disclosed in the DEIR. As a result, the model underestimates the Project’s emissions, and the DEIR’s quantitative GHG analysis should not be relied upon to determine Project significance. An updated EIR should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the environment.

#### *2) Updated Analysis Indicates a Potentially Significant Impact*

SWAPE’s updated air model indicates a potentially significant GHG impact, when applying the City’s threshold of 3.57 MT CO<sub>2</sub>e/SP/year. The updated CalEEMod output files indicate that the Project would generate GHG emissions of approximately 4,873.66 MT CO<sub>2</sub>e of total construction emissions (sum of 2023, 2024 and 2025) and approximately 10,667.49 MT CO<sub>2</sub>e/year of net annual operational emissions (sum of area-, energy-, mobile-, stationary-, and water-related emissions). When amortizing the Project’s construction-related GHG emissions over a period of 30 years and summing them with the

Project's operational GHG emissions, we estimate net annual GHG emissions of approximately 10,829.94 MT CO<sub>2</sub>e/year. Furthermore, based on a service population of 959 people, we estimate that the Project would have a service population efficiency value of 11.29 MT CO<sub>2</sub>e/SP/year (see table below).

SWAPE Annual Greenhouse Gas Emissions	
Project Phase	Proposed Project
<i>Total Construction</i>	<i>4,873.66</i>
Construction (amortized over 30 years)	162.46
<i>Area</i>	<i>3.14</i>
<i>Energy</i>	<i>2,551.36</i>
<i>Mobile</i>	<i>7,986.45</i>
<i>Stationary</i>	<i>8.54</i>
<i>Water</i>	<i>118.00</i>
Annual Operational	10,667.49
<b>Total Annual GHG Emissions (MT CO<sub>2</sub>e/year)</b>	<b>10,829.94</b>
Service Population	959
<b>Service Population Efficiency (MT CO<sub>2</sub>e/SP/year)</b>	<b>11.29</b>
<b>Pasadena City Threshold</b>	<b>3.57</b>
<i>Exceeds?</i>	<i>Yes</i>

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As demonstrated above, the Project's service population efficiency value, as estimated by SWAPE, exceeds the City's threshold of 3.57 MT CO<sub>2</sub>e/SP/year, thus resulting in a significant impact not previously addressed or mitigated in the DEIR. As a result, the DEIR's less-than-significant GHG impact conclusion should not be relied upon. An updated EIR should be prepared, including an updated GHG analysis and incorporating additional mitigation measures to reduce the Project's GHG emissions to less-than-significant levels.

### Feasible Mitigation Measures Available to Reduce Emissions

Our analysis demonstrates that the Project would result in potentially significant air quality and GHG impacts that should be mitigated further. As such, in an effort to reduce the Project's emissions, we identified several mitigation measures that are applicable to the proposed Project. Therefore, to reduce the Project's emissions, we recommend consideration of SCAG's 2020 RTP/SCS PEIR's Air Quality Project Level Mitigation Measures ("PMM-AQ-1") and Greenhouse Gas Project Level Mitigation Measures ("PMM-GHG-1"), as described below:<sup>22</sup>

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<sup>22</sup> "4.0 Mitigation Measures." Connect SoCal Program Environmental Impact Report Addendum #1, September 2020, available at: [https://scag.ca.gov/sites/main/files/file\\_attachments/fpeir\\_connectsocial\\_addendum\\_4\\_mitigationmeasures.pdf?1606004420](https://scag.ca.gov/sites/main/files/file_attachments/fpeir_connectsocial_addendum_4_mitigationmeasures.pdf?1606004420), p. 4.0-2 – 4.0-10; 4.0-19 –



## SCAG RTP/SCS 2020-2045

### Air Quality Project Level Mitigation Measures – PMM-AQ-1:

In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the *State CEQA Guidelines*, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency:

- a) Minimize land disturbance.
- b) Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
- c) Cover trucks when hauling dirt.
- d) Stabilize the surface of dirt piles if not removed immediately.
- e) Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
- f) Minimize unnecessary vehicular and machinery activities.
- g) Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
- h) Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.
- j) Require contractors to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that could be used an aggregate of 40 or more hours for the construction project. Prepare a plan for approval by the applicable air district demonstrating achievement of the applicable percent reduction for a CARB-approved fleet.
- k) Ensure that all construction equipment is properly tuned and maintained.
- l) Minimize idling time to 5 minutes—saves fuel and reduces emissions.
- m) Provide an operational water truck on-site at all times. Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas. Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
- n) Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
- o) Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
- p) As appropriate require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site.
- q) Require projects within 500 feet of residences, hospitals, or schools to use Tier 4 equipment for all engines above 50 horsepower (hp) unless the individual project can demonstrate that Tier 4 engines would not be required to mitigate emissions below significance thresholds.

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4.0-23; See also: “Certified Final Connect SoCal Program Environmental Impact Report.” Southern California Association of Governments (SCAG), May 2020, available at: <https://scag.ca.gov/peir>.

r) Projects located within the South Coast Air Basin should consider applying for South Coast AQMD “SOON” funds which provides funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NOx emissions from in-use off-road diesel vehicles.
s) Projects located within AB 617 communities should review the applicable Community Emissions Reduction Plan (CERP) for additional mitigation that can be applied to individual projects.
t) Where applicable, projects should provide information about air quality related programs to schools, including the Environmental Justice Community Partnerships (EJCP), Clean Air Ranger Education (CARE), and Why Air Quality Matters programs.
u) Projects should work with local cities and counties to install adequate signage that prohibits truck idling in certain locations (e.g., near schools and sensitive receptors).
y) Projects that will introduce sensitive receptors within 500 feet of freeways and other sources should consider installing high efficiency of enhanced filtration units, such as Minimum Efficiency Reporting Value (MERV) 13 or better. Installation of enhanced filtration units can be verified during occupancy inspection prior to the issuance of an occupancy permit.
z) Develop an ongoing monitoring, inspection, and maintenance program for the MERV filters.
aa) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities.
bb) The following criteria related to diesel emissions shall be implemented on by individual project sponsors as appropriate and feasible: <ul style="list-style-type: none"> <li>- Diesel nonroad vehicles on site for more than 10 total days shall have either (1) engines that meet EPA on road emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%</li> <li>- Diesel generators on site for more than 10 total days shall be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.</li> <li>- Nonroad diesel engines on site shall be Tier 2 or higher.</li> <li>- Diesel nonroad construction equipment on site for more than 10 total days shall have either (1) engines meeting EPA Tier 4 nonroad emissions standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines for 50 hp and greater and by a minimum of 20% for engines less than 50 hp.</li> <li>- Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.</li> <li>- Diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend approved by the original engine manufacturer with sulfur content of 15 ppm or less.</li> <li>- The construction contractor shall maintain a list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following: <ul style="list-style-type: none"> <li>i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.</li> <li>ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.</li> <li>iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.</li> </ul> </li> <li>- The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.</li> <li>- The contractor shall maintain a monthly report that, for each on road diesel vehicle, nonroad construction equipment, or generator onsite, includes:</li> </ul>

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<ul style="list-style-type: none"> <li>i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date.</li> <li>ii. Any problems with the equipment or emission controls.</li> <li>iii. Certified copies of fuel deliveries for the time period that identify: <ul style="list-style-type: none"> <li>1. Source of supply</li> <li>2. Quantity of fuel</li> <li>3. Quantity of fuel, including sulfur content (percent by weight)</li> </ul> </li> </ul>	<p>cc) Project should exceed Title-24 Building Envelope Energy Efficiency Standards (California Building Standards Code). The following measures can be used to increase energy efficiency:</p> <ul style="list-style-type: none"> <li>- Provide pedestrian network improvements, such as interconnected street network, narrower roadways and shorter block lengths, sidewalks, accessibility to transit and transit shelters, traffic calming measures, parks and public spaces, minimize pedestrian barriers.</li> <li>- Provide traffic calming measures, such as: <ul style="list-style-type: none"> <li>i. Marked crosswalks</li> <li>ii. Count-down signal timers</li> <li>iii. Curb extensions</li> <li>iv. Speed tables</li> <li>v. Raised crosswalks</li> <li>vi. Raised intersections</li> <li>vii. Median islands</li> <li>viii. Tight corner radii</li> <li>ix. Roundabouts or mini-circles</li> <li>x. On-street parking</li> <li>x. Chicanes/chokers</li> </ul> </li> <li>- Create urban non-motorized zones</li> <li>- Provide bike parking in non-residential and multi-unit residential projects</li> <li>- Dedicate land for bike trails</li> <li>- Limit parking supply through: <ul style="list-style-type: none"> <li>i. Elimination (or reduction) of minimum parking requirements</li> <li>ii. Creation of maximum parking requirements</li> <li>iii. Provision of shared parking</li> </ul> </li> <li>- Require residential area parking permit.</li> <li>- Provide ride-sharing programs <ul style="list-style-type: none"> <li>i. Designate a certain percentage of parking spacing for ride sharing vehicles</li> <li>ii. Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles</li> <li>iii. Providing a web site or messaging board for coordinating rides</li> <li>iv. Permanent transportation management association membership and finding requirement.</li> </ul> </li> </ul>
<p style="text-align: center;"><b>Greenhouse Gas Project Level Mitigation Measures – PMM-GHG-1</b></p> <p style="text-align: center;">In accordance with provisions of sections 15091(a)(2) and 15126.4(a)(1)(B) of the <i>State CEQA Guidelines</i>, a Lead Agency for a project can and should consider mitigation measures to reduce substantial adverse effects related to violating air quality standards. Such measures may include the following or other comparable measures identified by the Lead Agency:</p>	
<p>b) Reduce emissions resulting from projects through implementation of project features, project design, or other measures, such as those described in Appendix F of the State CEQA Guidelines.</p>	
<p>c) Include off-site measures to mitigate a project's emissions.</p>	
<p>d) Measures that consider incorporation of Best Available Control Technology (BACT) during design, construction and operation of projects to minimize GHG emissions, including but not limited to:</p> <ul style="list-style-type: none"> <li>i. Use energy and fuel-efficient vehicles and equipment;</li> <li>ii. Deployment of zero- and/or near zero emission technologies;</li> </ul>	

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<ul style="list-style-type: none"> <li>iii. Use lighting systems that are energy efficient, such as LED technology;</li> <li>iv. Use the minimum feasible amount of GHG-emitting construction materials;</li> <li>v. Use cement blended with the maximum feasible amount of flash or other materials that reduce GHG emissions from cement production;</li> <li>vi. Incorporate design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse;</li> <li>vii. Incorporate design measures to reduce energy consumption and increase use of renewable energy;</li> <li>viii. Incorporate design measures to reduce water consumption;</li> <li>ix. Use lighter-colored pavement where feasible;</li> <li>x. Recycle construction debris to maximum extent feasible;</li> <li>xi. Plant shade trees in or near construction projects where feasible; and</li> <li>xii. Solicit bids that include concepts listed above.</li> </ul>
<p>e) Measures that encourage transit use, carpooling, bike-share and car-share programs, active transportation, and parking strategies, including, but not limited to the following:</p> <ul style="list-style-type: none"> <li>i. Promote transit-active transportation coordinated strategies;</li> <li>ii. Increase bicycle carrying capacity on transit and rail vehicles;</li> <li>iii. Improve or increase access to transit;</li> <li>iv. Increase access to common goods and services, such as groceries, schools, and day care;</li> <li>v. Incorporate affordable housing into the project;</li> <li>vi. Incorporate the neighborhood electric vehicle network;</li> <li>vii. Orient the project toward transit, bicycle and pedestrian facilities;</li> <li>viii. Improve pedestrian or bicycle networks, or transit service;</li> <li>ix. Provide traffic calming measures;</li> <li>x. Provide bicycle parking;</li> <li>xi. Limit or eliminate park supply;</li> <li>xii. Unbundle parking costs;</li> <li>xiii. Provide parking cash-out programs;</li> <li>xiv. Implement or provide access to commute reduction program;</li> </ul>
<p>f) Incorporate bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;</p>
<p>g) Improving transit access to rail and bus routes by incentives for construction and transit facilities within developments, and/or providing dedicated shuttle service to transit stations; and</p>
<p>h) Adopting employer trip reduction measures to reduce employee trips such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs including but not limited to measures that:</p> <ul style="list-style-type: none"> <li>i. Provide car-sharing, bike sharing, and ride-sharing programs;</li> <li>ii. Provide transit passes;</li> <li>iii. Shift single occupancy vehicle trips to carpooling or vanpooling, for example providing ride-matching services;</li> <li>iv. Provide incentives or subsidies that increase that use of modes other than single-occupancy vehicle;</li> <li>v. Provide on-site amenities at places of work, such as priority parking for carpools and vanpools, secure bike parking, and showers and locker rooms;</li> <li>vi. Provide employee transportation coordinators at employment sites;</li> <li>vii. Provide a guaranteed ride home service to users of non-auto modes.</li> </ul>

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i) Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;
j) Land use siting and design measures that reduce GHG emissions, including: <ul style="list-style-type: none"> <li>i. Developing on infill and brownfields sites;</li> <li>ii. Building compact and mixed-use developments near transit;</li> <li>iii. Retaining on-site mature trees and vegetation, and planting new canopy trees;</li> <li>iv. Measures that increase vehicle efficiency, encourage use of zero and low emissions vehicles, or reduce the carbon content of fuels, including constructing or encouraging construction of electric vehicle charging stations or neighborhood electric vehicle networks, or charging for electric bicycles; and</li> <li>v. Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.</li> </ul>
k) Consult the SCAG Environmental Justice Toolbox for potential measures to address impacts to low-income and/or minority communities. The measures provided above are also intended to be applied in low income and minority communities as applicable and feasible.
l) Require at least five percent of all vehicle parking spaces include electric vehicle charging stations, or at a minimum, require the appropriate infrastructure to facilitate sufficient electric charging for passenger vehicles and trucks to plug-in.
m) Encourage telecommuting and alternative work schedules, such as: <ul style="list-style-type: none"> <li>i. Staggered starting times</li> <li>ii. Flexible schedules</li> <li>iii. Compressed work weeks</li> </ul>
n) Implement commute trip reduction marketing, such as: <ul style="list-style-type: none"> <li>i. New employee orientation of trip reduction and alternative mode options</li> <li>ii. Event promotions</li> <li>iii. Publications</li> </ul>
o) Implement preferential parking permit program
p) Implement school pool and bus programs
q) Price workplace parking, such as: <ul style="list-style-type: none"> <li>i. Explicitly charging for parking for its employees;</li> <li>ii. Implementing above market rate pricing;</li> <li>iii. Validating parking only for invited guests;</li> <li>iv. Not providing employee parking and transportation allowances; and</li> <li>v. Educating employees about available alternatives.</li> </ul>

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

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## Disclaimer

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

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Sincerely,



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



Paul E. Rosenfeld, Ph.D.

Attachment A: CalEEMod Output Files

Attachment B: Matt Hagemann CV

Attachment C: Paul E. Rosenfeld CV

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## Affinity-Proposed

## Los Angeles-South Coast County, Annual

## 1.0 Project Characteristics

## 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	151.00	1000sqft	0.88	151,000.00	0
Enclosed Parking with Elevator	415.06	1000sqft	0.20	415,063.00	0
High Turnover (Sit Down Restaurant)	3.00	1000sqft	0.02	3,000.00	0
Apartments Mid Rise	95.00	Dwelling Unit	0.45	98,576.00	111
Congregate Care (Assisted Living)	86.00	Dwelling Unit	0.45	85,800.00	111

## 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2024
Utility Company	Pasadena Water and Power				
CO2 Intensity (lb/MWhr)	872.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

## 1.3 User Entered Comments &amp; Non-Default Data

Project Characteristics - See SWAPE comment on "Unsubstantiated Changes to CH4, CO2, and N2O Intensity Factors."

Land Use - Consistent with the DEIR's model.

Construction Phase - See SWAPE comment on "Unsubstantiated Change to Architectural Coating Phase Length."

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Grading - Consistent with the DEIR's model.

Demolition - Consistent with the DEIR's model.



## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Trips and VMT - See SWAPE comment on "Underestimated Number of Building Construction Hauling Trips," and "Unsubstantiated Reductions to Number of Worker and Vendor Trips."

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Vehicle Trips - See SWAPE comment on "Underestimated Number of Saturday and Sunday Vehicle Trips," and "Unsubstantiated Reduction to Operational Vehicle Trip Lengths."

Fleet Mix - See SWAPE comment on "Unsubstantiated Changes to Operational Vehicle Fleet Mix Percentages."

Woodstoves - Consistent with the DEIR's model.

Energy Use - Consistent with the DEIR's model.

Water And Wastewater - Consistent with the DEIR's model.

Stationary Sources - Emergency Generators and Fire Pumps - Consistent with the DEIR's model.

Construction Off-road Equipment Mitigation - Consistent with the DEIR's model.

Waste Mitigation - Consistent with the DEIR's model.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	640.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	4.00	108.00
tblConstructionPhase	NumDays	2.00	26.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/5/2024	11/27/2025
tblConstructionPhase	PhaseEndDate	1/22/2024	11/15/2025
tblConstructionPhase	PhaseEndDate	4/7/2023	5/27/2023
tblConstructionPhase	PhaseEndDate	4/17/2023	10/31/2023
tblConstructionPhase	PhaseEndDate	4/11/2023	6/27/2023

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblConstructionPhase	PhaseStartDate	1/23/2024	11/16/2025
tblConstructionPhase	PhaseStartDate	4/18/2023	11/1/2023
tblConstructionPhase	PhaseStartDate	4/12/2023	6/28/2023
tblConstructionPhase	PhaseStartDate	4/8/2023	5/28/2023
tblEnergyUse	LightingElect	741.44	851.37
tblEnergyUse	LightingElect	741.44	940.47
tblEnergyUse	LightingElect	7.87	31.14
tblEnergyUse	LightingElect	3.77	4.13
tblEnergyUse	NT24E	3,054.10	3,506.90
tblEnergyUse	NT24E	3,054.10	3,873.90
tblEnergyUse	NT24E	28.16	111.42
tblEnergyUse	NT24E	4.62	5.06
tblEnergyUse	NT24NG	6,384.00	4,898.50
tblEnergyUse	NT24NG	6,384.00	5,411.10
tblEnergyUse	NT24NG	187.78	565.70
tblEnergyUse	T24E	53.81	61.79
tblEnergyUse	T24E	53.81	68.25
tblEnergyUse	T24E	7.24	28.65
tblEnergyUse	T24E	4.11	4.50
tblEnergyUse	T24NG	6,682.59	5,127.60
tblEnergyUse	T24NG	6,682.59	5,664.20
tblEnergyUse	T24NG	42.55	128.20
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	80.75	0.00
tblFireplaces	NumberGas	73.10	0.00
tblFireplaces	NumberNoFireplace	9.50	0.00

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblFireplaces	NumberNoFireplace	8.60	0.00
tblFireplaces	NumberWood	4.75	0.00
tblFireplaces	NumberWood	4.30	0.00
tblGrading	MaterialExported	0.00	184,013.00
tblGrading	MaterialExported	0.00	480.00
tblLandUse	LandUseSquareFeet	415,060.00	415,063.00
tblLandUse	LandUseSquareFeet	95,000.00	98,576.00
tblLandUse	LandUseSquareFeet	86,000.00	85,800.00
tblLandUse	LotAcreage	3.47	0.88
tblLandUse	LotAcreage	9.53	0.20
tblLandUse	LotAcreage	0.07	0.02
tblLandUse	LotAcreage	2.50	0.45
tblLandUse	LotAcreage	5.38	0.45
tblLandUse	Population	272.00	111.00
tblLandUse	Population	246.00	111.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	7.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	215.00

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	52.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	209.00	600.00
tblTripsAndVMT	HaulingTripNumber	23,002.00	26,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	795.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	20.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	43.00	0.00
tblVehicleTrips	PB_TP	10.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	37.00	100.00
tblVehicleTrips	PR_TP	60.00	100.00
tblVehicleTrips	ST_TR	4.91	5.84
tblVehicleTrips	ST_TR	2.93	10.32
tblVehicleTrips	ST_TR	122.40	792.50
tblVehicleTrips	ST_TR	8.57	16.86
tblVehicleTrips	SU_TR	4.09	6.73
tblVehicleTrips	SU_TR	3.15	15.33

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblVehicleTrips	SU_TR	142.64	1,274.78
tblVehicleTrips	SU_TR	1.42	3.86
tblWater	IndoorWaterUseRate	6,189,632.43	2,609,750.00
tblWater	IndoorWaterUseRate	5,603,246.20	1,635,200.00
tblWater	IndoorWaterUseRate	910,601.14	5,835,620.00
tblWater	IndoorWaterUseRate	18,947,561.17	7,716,100.00
tblWater	OutdoorWaterUseRate	3,902,159.58	102,200.00
tblWater	OutdoorWaterUseRate	3,532,481.30	102,200.00
tblWater	OutdoorWaterUseRate	58,123.48	102,200.00
tblWater	OutdoorWaterUseRate	3,609,059.27	102,200.00
tblWoodstoves	NumberCatalytic	4.75	0.00
tblWoodstoves	NumberCatalytic	4.30	0.00
tblWoodstoves	NumberNoncatalytic	4.75	0.00
tblWoodstoves	NumberNoncatalytic	4.30	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

**2.0 Emissions Summary**

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## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****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					
2023	0.4159	3.9956	4.3759	0.0119	0.2296	0.1439	0.3735	0.0582	0.1362	0.1944	0.0000	1,068.717 9	1,068.717 9	0.1912	0.0457	1,087.110 5
2024	0.9316	6.8988	10.2042	0.0226	0.7217	0.2666	0.9883	0.1943	0.2599	0.4542	0.0000	2,004.036 2	2,004.036 2	0.1900	0.0580	2,026.071 9
2025	2.1145	5.6970	8.8187	0.0196	0.6336	0.2033	0.8370	0.1706	0.1981	0.3686	0.0000	1,741.617 1	1,741.617 1	0.1626	0.0493	1,760.373 6
Maximum	2.1145	6.8988	10.2042	0.0226	0.7217	0.2666	0.9883	0.1943	0.2599	0.4542	0.0000	2,004.036 2	2,004.036 2	0.1912	0.0580	2,026.071 9

**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					
2023	0.4159	3.9956	4.3759	0.0119	0.2296	0.1439	0.3735	0.0582	0.1362	0.1944	0.0000	1,068.717 1	1,068.717 1	0.1912	0.0457	1,087.109 6
2024	0.9316	6.8988	10.2041	0.0226	0.7217	0.2666	0.9883	0.1943	0.2599	0.4542	0.0000	2,004.034 8	2,004.034 8	0.1900	0.0580	2,026.070 5
2025	2.1145	5.6969	8.8187	0.0196	0.6336	0.2033	0.8370	0.1706	0.1981	0.3686	0.0000	1,741.615 8	1,741.615 8	0.1626	0.0493	1,760.372 3
Maximum	2.1145	6.8988	10.2041	0.0226	0.7217	0.2666	0.9883	0.1943	0.2599	0.4542	0.0000	2,004.034 8	2,004.034 8	0.1912	0.0580	2,026.070 5

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-13-2023	6-12-2023	0.5620	0.5620
2	6-13-2023	9-12-2023	1.5285	1.5285
3	9-13-2023	12-12-2023	1.8755	1.8755
4	12-13-2023	3-12-2024	1.9716	1.9716
5	3-13-2024	6-12-2024	1.9576	1.9576
6	6-13-2024	9-12-2024	1.9547	1.9547
7	9-13-2024	12-12-2024	1.9446	1.9446
8	12-13-2024	3-12-2025	1.8376	1.8376
9	3-13-2025	6-12-2025	1.8434	1.8434
10	6-13-2025	9-12-2025	1.8405	1.8405
11	9-13-2025	9-30-2025	0.3601	0.3601
		Highest	1.9716	1.9716

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4412	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372
Energy	0.0299	0.2661	0.1872	1.6300e-003		0.0207	0.0207		0.0207	0.0207	0.0000	2,544.4054	2,544.4054	0.0907	0.0157	2,551.3586
Mobile	3.5388	4.1608	37.8532	0.0837	8.8803	0.0612	8.9415	2.3691	0.0568	2.4259	0.0000	7,874.8405	7,874.8405	0.5204	0.3309	7,986.4502
Stationary	0.0183	0.0513	0.0468	9.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.5146	8.5146	1.1900e-003	0.0000	8.5445
Waste						0.0000	0.0000		0.0000	0.0000	363.0839	0.0000	363.0839	21.4576	0.0000	899.5249
Water						0.0000	0.0000		0.0000	0.0000	5.6461	93.5584	99.2044	0.5834	0.0141	117.9987
Total	5.0282	4.4998	39.9602	0.0855	8.8803	0.0949	8.9752	2.3691	0.0905	2.4596	368.7299	10,524.3821	10,893.1120	22.6563	0.3607	11,567.0140

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4412	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372
Energy	0.0299	0.2661	0.1872	1.6300e-003		0.0207	0.0207		0.0207	0.0207	0.0000	2,544.4054	2,544.4054	0.0907	0.0157	2,551.3586
Mobile	3.5388	4.1608	37.8532	0.0837	8.8803	0.0612	8.9415	2.3691	0.0568	2.4259	0.0000	7,874.8405	7,874.8405	0.5204	0.3309	7,986.4502
Stationary	0.0183	0.0513	0.0468	9.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.5146	8.5146	1.1900e-003	0.0000	8.5445
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	5.6461	93.5584	99.2044	0.5834	0.0141	117.9987
<b>Total</b>	<b>5.0282</b>	<b>4.4998</b>	<b>39.9602</b>	<b>0.0855</b>	<b>8.8803</b>	<b>0.0949</b>	<b>8.9752</b>	<b>2.3691</b>	<b>0.0905</b>	<b>2.4596</b>	<b>5.6461</b>	<b>10,524.3821</b>	<b>10,530.0282</b>	<b>1.1987</b>	<b>0.3607</b>	<b>10,667.4892</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>98.47</b>	<b>0.00</b>	<b>3.33</b>	<b>94.71</b>	<b>0.00</b>	<b>7.78</b>

## 3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/13/2023	5/27/2023	6	66	
2	Site Preparation	Site Preparation	5/28/2023	6/27/2023	6	26	

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

3	Grading	Grading	6/28/2023	10/31/2023	6	108
4	Building Construction	Building Construction	11/1/2023	11/15/2025	6	640
5	Architectural Coating	Architectural Coating	11/16/2025	11/27/2025	6	10

**Acres of Grading (Site Preparation Phase): 0****Acres of Grading (Grading Phase): 0****Acres of Paving: 0.2****Residential Indoor: 373,361; Residential Outdoor: 124,454; Non-Residential Indoor: 231,000; Non-Residential Outdoor: 77,000; Striped Parking Area: 24,904 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	12.00	78	0.48
Demolition	Excavators	1	12.00	158	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	1	12.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	1	12.00	84	0.74
Grading	Graders	0	8.00	187	0.41
Site Preparation	Graders	0	8.00	187	0.41
Demolition	Off-Highway Trucks	1	12.00	402	0.38
Site Preparation	Excavators	1	12.00	158	0.38
Site Preparation	Off-Highway Trucks	1	12.00	402	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	12.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	12.00	97	0.37



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Grading	Bore/Drill Rigs	2	12.00	221	0.50
Site Preparation	Tractors/Loaders/Backhoes	2	12.00	97	0.37
Building Construction	Welders	3	12.00	46	0.45
Grading	Cranes	2	12.00	231	0.29
Grading	Generator Sets	1	12.00	84	0.74
Grading	Plate Compactors	1	12.00	8	0.43
Grading	Excavators	1	12.00	158	0.38
Building Construction	Air Compressors	2	12.00	78	0.48
Building Construction	Skid Steer Loaders	2	12.00	65	0.37
Building Construction	Pumps	3	12.00	84	0.74
Building Construction	Excavators	1	12.00	158	0.38

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	600.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	60.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	26,400.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	354.00	113.00	795.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	71.00	0.00	0.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****Water Exposed Area**

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.2 Demolition - 2023

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					0.0226	0.0000	0.0226	3.4200e-003	0.0000	3.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0494	0.4066	0.5466	1.2200e-003		0.0177	0.0177		0.0163	0.0163	0.0000	107.4164	107.4164	0.0347	0.0000	108.2849
<b>Total</b>	<b>0.0494</b>	<b>0.4066</b>	<b>0.5466</b>	<b>1.2200e-003</b>	<b>0.0226</b>	<b>0.0177</b>	<b>0.0403</b>	<b>3.4200e-003</b>	<b>0.0163</b>	<b>0.0197</b>	<b>0.0000</b>	<b>107.4164</b>	<b>107.4164</b>	<b>0.0347</b>	<b>0.0000</b>	<b>108.2849</b>

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	3.9000e-004	0.0145	6.0300e-003	5.0000e-005	1.3000e-003	6.0000e-005	1.3600e-003	3.6000e-004	6.0000e-005	4.2000e-004	0.0000	4.9502	4.9502	2.6000e-004	7.9000e-004	5.1907
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	1.0500e-003	8.3000e-004	0.0113	3.0000e-005	3.6200e-003	2.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	2.9145	2.9145	8.0000e-005	7.0000e-005	2.9387
<b>Total</b>	<b>1.4400e-003</b>	<b>0.0153</b>	<b>0.0173</b>	<b>8.0000e-005</b>	<b>4.9200e-003</b>	<b>8.0000e-005</b>	<b>5.0000e-003</b>	<b>1.3200e-003</b>	<b>8.0000e-005</b>	<b>1.4000e-003</b>	<b>0.0000</b>	<b>7.8647</b>	<b>7.8647</b>	<b>3.4000e-004</b>	<b>8.6000e-004</b>	<b>8.1295</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.2 Demolition - 2023

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					0.0226	0.0000	0.0226	3.4200e-003	0.0000	3.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0494	0.4066	0.5466	1.2200e-003		0.0177	0.0177		0.0163	0.0163	0.0000	107.4163	107.4163	0.0347	0.0000	108.2848
<b>Total</b>	<b>0.0494</b>	<b>0.4066</b>	<b>0.5466</b>	<b>1.2200e-003</b>	<b>0.0226</b>	<b>0.0177</b>	<b>0.0403</b>	<b>3.4200e-003</b>	<b>0.0163</b>	<b>0.0197</b>	<b>0.0000</b>	<b>107.4163</b>	<b>107.4163</b>	<b>0.0347</b>	<b>0.0000</b>	<b>108.2848</b>

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	3.9000e-004	0.0145	6.0300e-003	5.0000e-005	1.3000e-003	6.0000e-005	1.3600e-003	3.6000e-004	6.0000e-005	4.2000e-004	0.0000	4.9502	4.9502	2.6000e-004	7.9000e-004	5.1907
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	1.0500e-003	8.3000e-004	0.0113	3.0000e-005	3.6200e-003	2.0000e-005	3.6400e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	2.9145	2.9145	8.0000e-005	7.0000e-005	2.9387
<b>Total</b>	<b>1.4400e-003</b>	<b>0.0153</b>	<b>0.0173</b>	<b>8.0000e-005</b>	<b>4.9200e-003</b>	<b>8.0000e-005</b>	<b>5.0000e-003</b>	<b>1.3200e-003</b>	<b>8.0000e-005</b>	<b>1.4000e-003</b>	<b>0.0000</b>	<b>7.8647</b>	<b>7.8647</b>	<b>3.4000e-004</b>	<b>8.6000e-004</b>	<b>8.1295</b>

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.3 Site Preparation - 2023

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					3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.1602	0.2153	4.8000e-004		6.9700e-003	6.9700e-003		6.4100e-003	6.4100e-003	0.0000	42.3156	42.3156	0.0137	0.0000	42.6577
Total	0.0195	0.1602	0.2153	4.8000e-004	3.0000e-005	6.9700e-003	7.0000e-003	0.0000	6.4100e-003	6.4100e-003	0.0000	42.3156	42.3156	0.0137	0.0000	42.6577

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	4.0000e-005	1.4500e-003	6.0000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4950	0.4950	3.0000e-005	8.0000e-005	0.5191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.3000e-004	4.4400e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1481	1.1481	3.0000e-005	3.0000e-005	1.1577
Total	4.5000e-004	1.7800e-003	5.0400e-003	1.0000e-005	1.5500e-003	2.0000e-005	1.5700e-003	4.2000e-004	2.0000e-005	4.3000e-004	0.0000	1.6432	1.6432	6.0000e-005	1.1000e-004	1.6768

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.3 Site Preparation - 2023

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					3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.1602	0.2153	4.8000e-004		6.9700e-003	6.9700e-003		6.4100e-003	6.4100e-003	0.0000	42.3155	42.3155	0.0137	0.0000	42.6577
Total	0.0195	0.1602	0.2153	4.8000e-004	3.0000e-005	6.9700e-003	7.0000e-003	0.0000	6.4100e-003	6.4100e-003	0.0000	42.3155	42.3155	0.0137	0.0000	42.6577

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	4.0000e-005	1.4500e-003	6.0000e-004	0.0000	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4950	0.4950	3.0000e-005	8.0000e-005	0.5191
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.3000e-004	4.4400e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1481	1.1481	3.0000e-005	3.0000e-005	1.1577
Total	4.5000e-004	1.7800e-003	5.0400e-003	1.0000e-005	1.5500e-003	2.0000e-005	1.5700e-003	4.2000e-004	2.0000e-005	4.3000e-004	0.0000	1.6432	1.6432	6.0000e-005	1.1000e-004	1.6768

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Grading - 2023****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					0.0104	0.0000	0.0104	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1595	1.5613	1.5671	3.9700e-003		0.0660	0.0660		0.0616	0.0616	0.0000	346.3609	346.3609	0.0987	0.0000	348.8277
<b>Total</b>	<b>0.1595</b>	<b>1.5613</b>	<b>1.5671</b>	<b>3.9700e-003</b>	<b>0.0104</b>	<b>0.0660</b>	<b>0.0764</b>	<b>1.5800e-003</b>	<b>0.0616</b>	<b>0.0632</b>	<b>0.0000</b>	<b>346.3609</b>	<b>346.3609</b>	<b>0.0987</b>	<b>0.0000</b>	<b>348.8277</b>

**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	0.0171	0.6379	0.2652	2.1900e-003	0.0570	2.8300e-003	0.0598	0.0157	2.7100e-003	0.0184	0.0000	217.8080	217.8080	0.0113	0.0346	228.3921
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9400e-003	3.1300e-003	0.0424	1.2000e-004	0.0136	8.0000e-005	0.0137	3.6100e-003	8.0000e-005	3.6900e-003	0.0000	10.9691	10.9691	2.9000e-004	2.8000e-004	11.0603
<b>Total</b>	<b>0.0210</b>	<b>0.6410</b>	<b>0.3077</b>	<b>2.3100e-003</b>	<b>0.0706</b>	<b>2.9100e-003</b>	<b>0.0735</b>	<b>0.0193</b>	<b>2.7900e-003</b>	<b>0.0221</b>	<b>0.0000</b>	<b>228.7771</b>	<b>228.7771</b>	<b>0.0116</b>	<b>0.0349</b>	<b>239.4524</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Grading - 2023****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					0.0104	0.0000	0.0104	1.5800e-003	0.0000	1.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1595	1.5613	1.5671	3.9700e-003		0.0660	0.0660		0.0616	0.0616	0.0000	346.3605	346.3605	0.0987	0.0000	348.8273
<b>Total</b>	<b>0.1595</b>	<b>1.5613</b>	<b>1.5671</b>	<b>3.9700e-003</b>	<b>0.0104</b>	<b>0.0660</b>	<b>0.0764</b>	<b>1.5800e-003</b>	<b>0.0616</b>	<b>0.0632</b>	<b>0.0000</b>	<b>346.3605</b>	<b>346.3605</b>	<b>0.0987</b>	<b>0.0000</b>	<b>348.8273</b>

**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	0.0171	0.6379	0.2652	2.1900e-003	0.0570	2.8300e-003	0.0598	0.0157	2.7100e-003	0.0184	0.0000	217.8080	217.8080	0.0113	0.0346	228.3921
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9400e-003	3.1300e-003	0.0424	1.2000e-004	0.0136	8.0000e-005	0.0137	3.6100e-003	8.0000e-005	3.6900e-003	0.0000	10.9691	10.9691	2.9000e-004	2.8000e-004	11.0603
<b>Total</b>	<b>0.0210</b>	<b>0.6410</b>	<b>0.3077</b>	<b>2.3100e-003</b>	<b>0.0706</b>	<b>2.9100e-003</b>	<b>0.0735</b>	<b>0.0193</b>	<b>2.7900e-003</b>	<b>0.0221</b>	<b>0.0000</b>	<b>228.7771</b>	<b>228.7771</b>	<b>0.0116</b>	<b>0.0349</b>	<b>239.4524</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2023

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	0.1321	1.0663	1.3575	2.3400e-003		0.0490	0.0490		0.0479	0.0479	0.0000	199.1003	199.1003	0.0282	0.0000	199.8041
<b>Total</b>	<b>0.1321</b>	<b>1.0663</b>	<b>1.3575</b>	<b>2.3400e-003</b>		<b>0.0490</b>	<b>0.0490</b>		<b>0.0479</b>	<b>0.0479</b>	<b>0.0000</b>	<b>199.1003</b>	<b>199.1003</b>	<b>0.0282</b>	<b>0.0000</b>	<b>199.8041</b>

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	4.0000e-005	1.5600e-003	6.5000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.5329	0.5329	3.0000e-005	8.0000e-005	0.5588
Vendor	3.3200e-003	0.1184	0.0443	5.5000e-004	0.0185	5.7000e-004	0.0191	5.3400e-003	5.4000e-004	5.8900e-003	0.0000	53.4194	53.4194	1.7900e-003	7.6900e-003	55.7550
Worker	0.0292	0.0232	0.3144	8.8000e-004	0.1009	6.2000e-004	0.1015	0.0268	5.7000e-004	0.0274	0.0000	81.2876	81.2876	2.1400e-003	2.0900e-003	81.9637
<b>Total</b>	<b>0.0326</b>	<b>0.1432</b>	<b>0.3594</b>	<b>1.4400e-003</b>	<b>0.1195</b>	<b>1.2000e-003</b>	<b>0.1207</b>	<b>0.0322</b>	<b>1.1200e-003</b>	<b>0.0333</b>	<b>0.0000</b>	<b>135.2399</b>	<b>135.2399</b>	<b>3.9600e-003</b>	<b>9.8600e-003</b>	<b>138.2775</b>



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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2023

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	0.1321	1.0663	1.3575	2.3400e-003		0.0490	0.0490		0.0479	0.0479	0.0000	199.1000	199.1000	0.0282	0.0000	199.8039
<b>Total</b>	<b>0.1321</b>	<b>1.0663</b>	<b>1.3575</b>	<b>2.3400e-003</b>		<b>0.0490</b>	<b>0.0490</b>		<b>0.0479</b>	<b>0.0479</b>	<b>0.0000</b>	<b>199.1000</b>	<b>199.1000</b>	<b>0.0282</b>	<b>0.0000</b>	<b>199.8039</b>

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	4.0000e-005	1.5600e-003	6.5000e-004	1.0000e-005	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.5329	0.5329	3.0000e-005	8.0000e-005	0.5588
Vendor	3.3200e-003	0.1184	0.0443	5.5000e-004	0.0185	5.7000e-004	0.0191	5.3400e-003	5.4000e-004	5.8900e-003	0.0000	53.4194	53.4194	1.7900e-003	7.6900e-003	55.7550
Worker	0.0292	0.0232	0.3144	8.8000e-004	0.1009	6.2000e-004	0.1015	0.0268	5.7000e-004	0.0274	0.0000	81.2876	81.2876	2.1400e-003	2.0900e-003	81.9637
<b>Total</b>	<b>0.0326</b>	<b>0.1432</b>	<b>0.3594</b>	<b>1.4400e-003</b>	<b>0.1195</b>	<b>1.2000e-003</b>	<b>0.1207</b>	<b>0.0322</b>	<b>1.1200e-003</b>	<b>0.0333</b>	<b>0.0000</b>	<b>135.2399</b>	<b>135.2399</b>	<b>3.9600e-003</b>	<b>9.8600e-003</b>	<b>138.2775</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2024

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	0.7473	6.0479	8.1697	0.0142		0.2595	0.2595		0.2532	0.2532	0.0000	1,202.366 2	1,202.366 2	0.1674	0.0000	1,206.550 2
<b>Total</b>	<b>0.7473</b>	<b>6.0479</b>	<b>8.1697</b>	<b>0.0142</b>		<b>0.2595</b>	<b>0.2595</b>		<b>0.2532</b>	<b>0.2532</b>	<b>0.0000</b>	<b>1,202.366 2</b>	<b>1,202.366 2</b>	<b>0.1674</b>	<b>0.0000</b>	<b>1,206.550 2</b>

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5000e-004	9.4300e-003	3.9500e-003	3.0000e-005	8.4000e-004	4.0000e-005	8.8000e-004	2.3000e-004	4.0000e-005	2.7000e-004	0.0000	3.1724	3.1724	1.7000e-004	5.0000e-004	3.3267
Vendor	0.0194	0.7164	0.2620	3.2500e-003	0.1118	3.4500e-003	0.1153	0.0323	3.3000e-003	0.0356	0.0000	317.7312	317.7312	0.0108	0.0458	331.6413
Worker	0.1647	0.1251	1.7685	5.1400e-003	0.6090	3.6000e-003	0.6126	0.1618	3.3100e-003	0.1651	0.0000	480.7664	480.7664	0.0117	0.0117	484.5536
<b>Total</b>	<b>0.1843</b>	<b>0.8509</b>	<b>2.0345</b>	<b>8.4200e-003</b>	<b>0.7217</b>	<b>7.0900e-003</b>	<b>0.7288</b>	<b>0.1943</b>	<b>6.6500e-003</b>	<b>0.2009</b>	<b>0.0000</b>	<b>801.6700</b>	<b>801.6700</b>	<b>0.0227</b>	<b>0.0580</b>	<b>819.5217</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2024

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	0.7473	6.0479	8.1697	0.0142		0.2595	0.2595		0.2532	0.2532	0.0000	1,202.3648	1,202.3648	0.1674	0.0000	1,206.5488
<b>Total</b>	<b>0.7473</b>	<b>6.0479</b>	<b>8.1697</b>	<b>0.0142</b>		<b>0.2595</b>	<b>0.2595</b>		<b>0.2532</b>	<b>0.2532</b>	<b>0.0000</b>	<b>1,202.3648</b>	<b>1,202.3648</b>	<b>0.1674</b>	<b>0.0000</b>	<b>1,206.5488</b>

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5000e-004	9.4300e-003	3.9500e-003	3.0000e-005	8.4000e-004	4.0000e-005	8.8000e-004	2.3000e-004	4.0000e-005	2.7000e-004	0.0000	3.1724	3.1724	1.7000e-004	5.0000e-004	3.3267
Vendor	0.0194	0.7164	0.2620	3.2500e-003	0.1118	3.4500e-003	0.1153	0.0323	3.3000e-003	0.0356	0.0000	317.7312	317.7312	0.0108	0.0458	331.6413
Worker	0.1647	0.1251	1.7685	5.1400e-003	0.6090	3.6000e-003	0.6126	0.1618	3.3100e-003	0.1651	0.0000	480.7664	480.7664	0.0117	0.0117	484.5536
<b>Total</b>	<b>0.1843</b>	<b>0.8509</b>	<b>2.0345</b>	<b>8.4200e-003</b>	<b>0.7217</b>	<b>7.0900e-003</b>	<b>0.7288</b>	<b>0.1943</b>	<b>6.6500e-003</b>	<b>0.2009</b>	<b>0.0000</b>	<b>801.6700</b>	<b>801.6700</b>	<b>0.0227</b>	<b>0.0580</b>	<b>819.5217</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2025

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	0.6105	4.9450	7.1050	0.0124		0.1962	0.1962		0.1913	0.1913	0.0000	1,049.235 3	1,049.235 3	0.1434	0.0000	1,052.819 2
<b>Total</b>	<b>0.6105</b>	<b>4.9450</b>	<b>7.1050</b>	<b>0.0124</b>		<b>0.1962</b>	<b>0.1962</b>		<b>0.1913</b>	<b>0.1913</b>	<b>0.0000</b>	<b>1,049.235 3</b>	<b>1,049.235 3</b>	<b>0.1434</b>	<b>0.0000</b>	<b>1,052.819 2</b>

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	8.1800e-003	3.4600e-003	3.0000e-005	7.3000e-004	4.0000e-005	7.7000e-004	2.0000e-004	4.0000e-005	2.4000e-004	0.0000	2.7192	2.7192	1.5000e-004	4.3000e-004	2.8516
Vendor	0.0165	0.6222	0.2244	2.7800e-003	0.0976	3.0200e-003	0.1006	0.0282	2.8900e-003	0.0311	0.0000	272.2677	272.2677	9.5100e-003	0.0393	284.2009
Worker	0.1346	0.0980	1.4391	4.3300e-003	0.5314	2.9900e-003	0.5344	0.1412	2.7500e-003	0.1439	0.0000	409.2924	409.2924	9.1900e-003	9.5600e-003	412.3699
<b>Total</b>	<b>0.1512</b>	<b>0.7283</b>	<b>1.6670</b>	<b>7.1400e-003</b>	<b>0.6297</b>	<b>6.0500e-003</b>	<b>0.6358</b>	<b>0.1695</b>	<b>5.6800e-003</b>	<b>0.1752</b>	<b>0.0000</b>	<b>684.2793</b>	<b>684.2793</b>	<b>0.0189</b>	<b>0.0492</b>	<b>699.4224</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2025

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	0.6105	4.9450	7.1050	0.0124		0.1962	0.1962		0.1913	0.1913	0.0000	1,049.2341	1,049.2341	0.1434	0.0000	1,052.8179
<b>Total</b>	<b>0.6105</b>	<b>4.9450</b>	<b>7.1050</b>	<b>0.0124</b>		<b>0.1962</b>	<b>0.1962</b>		<b>0.1913</b>	<b>0.1913</b>	<b>0.0000</b>	<b>1,049.2341</b>	<b>1,049.2341</b>	<b>0.1434</b>	<b>0.0000</b>	<b>1,052.8179</b>

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	8.1800e-003	3.4600e-003	3.0000e-005	7.3000e-004	4.0000e-005	7.7000e-004	2.0000e-004	4.0000e-005	2.4000e-004	0.0000	2.7192	2.7192	1.5000e-004	4.3000e-004	2.8516
Vendor	0.0165	0.6222	0.2244	2.7800e-003	0.0976	3.0200e-003	0.1006	0.0282	2.8900e-003	0.0311	0.0000	272.2677	272.2677	9.5100e-003	0.0393	284.2009
Worker	0.1346	0.0980	1.4391	4.3300e-003	0.5314	2.9900e-003	0.5344	0.1412	2.7500e-003	0.1439	0.0000	409.2924	409.2924	9.1900e-003	9.5600e-003	412.3699
<b>Total</b>	<b>0.1512</b>	<b>0.7283</b>	<b>1.6670</b>	<b>7.1400e-003</b>	<b>0.6297</b>	<b>6.0500e-003</b>	<b>0.6358</b>	<b>0.1695</b>	<b>5.6800e-003</b>	<b>0.1752</b>	<b>0.0000</b>	<b>684.2793</b>	<b>684.2793</b>	<b>0.0189</b>	<b>0.0492</b>	<b>699.4224</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.6 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4200e-003	0.0229	0.0362	6.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	5.1065	5.1065	2.8000e-004	0.0000	5.1135
<b>Total</b>	<b>1.3518</b>	<b>0.0229</b>	<b>0.0362</b>	<b>6.0000e-005</b>		<b>1.0300e-003</b>	<b>1.0300e-003</b>		<b>1.0300e-003</b>	<b>1.0300e-003</b>	<b>0.0000</b>	<b>5.1065</b>	<b>5.1065</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>5.1135</b>

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	9.8000e-004	7.2000e-004	0.0105	3.0000e-005	3.8900e-003	2.0000e-005	3.9100e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	2.9960	2.9960	7.0000e-005	7.0000e-005	3.0185
<b>Total</b>	<b>9.8000e-004</b>	<b>7.2000e-004</b>	<b>0.0105</b>	<b>3.0000e-005</b>	<b>3.8900e-003</b>	<b>2.0000e-005</b>	<b>3.9100e-003</b>	<b>1.0300e-003</b>	<b>2.0000e-005</b>	<b>1.0500e-003</b>	<b>0.0000</b>	<b>2.9960</b>	<b>2.9960</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>3.0185</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.6 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4200e-003	0.0229	0.0362	6.0000e-005		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	5.1065	5.1065	2.8000e-004	0.0000	5.1135
<b>Total</b>	<b>1.3518</b>	<b>0.0229</b>	<b>0.0362</b>	<b>6.0000e-005</b>		<b>1.0300e-003</b>	<b>1.0300e-003</b>		<b>1.0300e-003</b>	<b>1.0300e-003</b>	<b>0.0000</b>	<b>5.1065</b>	<b>5.1065</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>5.1135</b>

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	9.8000e-004	7.2000e-004	0.0105	3.0000e-005	3.8900e-003	2.0000e-005	3.9100e-003	1.0300e-003	2.0000e-005	1.0500e-003	0.0000	2.9960	2.9960	7.0000e-005	7.0000e-005	3.0185
<b>Total</b>	<b>9.8000e-004</b>	<b>7.2000e-004</b>	<b>0.0105</b>	<b>3.0000e-005</b>	<b>3.8900e-003</b>	<b>2.0000e-005</b>	<b>3.9100e-003</b>	<b>1.0300e-003</b>	<b>2.0000e-005</b>	<b>1.0500e-003</b>	<b>0.0000</b>	<b>2.9960</b>	<b>2.9960</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>3.0185</b>

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 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	3.5388	4.1608	37.8532	0.0837	8.8803	0.0612	8.9415	2.3691	0.0568	2.4259	0.0000	7,874.8405	7,874.8405	0.5204	0.3309	7,986,4502
Unmitigated	3.5388	4.1608	37.8532	0.0837	8.8803	0.0612	8.9415	2.3691	0.0568	2.4259	0.0000	7,874.8405	7,874.8405	0.5204	0.3309	7,986,4502

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	516.80	554.80	639.35	2,077,487	2,077,487
Congregate Care (Assisted Living)	223.60	887.52	1318.38	1,827,709	1,827,709
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	336.54	2,377.50	3824.34	3,612,885	3,612,885
Medical Office Building	5,254.80	2,545.86	582.86	16,118,406	16,118,406
Total	6,331.74	6,365.68	6,364.93	23,636,488	23,636,488

## 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 Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0
Congregate Care (Assisted)	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

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
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	100	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	100	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Congregate Care (Assisted Living)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Enclosed Parking with Elevator	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Medical Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive 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	2,248.5850	2,248.5850	0.0850	0.0103	2,253.7803
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,248.5850	2,248.5850	0.0850	0.0103	2,253.7803
Natural Gas Mitigated	0.0299	0.2661	0.1872	1.6300e-003		0.0207	0.0207		0.0207	0.0207	0.0000	295.8204	295.8204	5.6700e-003	5.4200e-003	297.5783
Natural Gas Unmitigated	0.0299	0.2661	0.1872	1.6300e-003		0.0207	0.0207		0.0207	0.0207	0.0000	295.8204	295.8204	5.6700e-003	5.4200e-003	297.5783

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## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	952480	5.1400e-003	0.0439	0.0187	2.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	50.8279	50.8279	9.7000e-004	9.3000e-004	51.1300
Congregate Care (Assisted Living)	952476	5.1400e-003	0.0439	0.0187	2.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	50.8277	50.8277	9.7000e-004	9.3000e-004	51.1298
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	2.0817e+006	0.0112	0.1020	0.0857	6.1000e-004		7.7600e-003	7.7600e-003		7.7600e-003	7.7600e-003	0.0000	111.0874	111.0874	2.1300e-003	2.0400e-003	111.7476
Medical Office Building	1.55681e+006	8.3900e-003	0.0763	0.0641	4.6000e-004		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	83.0773	83.0773	1.5900e-003	1.5200e-003	83.5710
<b>Total</b>		<b>0.0299</b>	<b>0.2661</b>	<b>0.1872</b>	<b>1.6300e-003</b>		<b>0.0207</b>	<b>0.0207</b>		<b>0.0207</b>	<b>0.0207</b>	<b>0.0000</b>	<b>295.8204</b>	<b>295.8204</b>	<b>5.6600e-003</b>	<b>5.4200e-003</b>	<b>297.5783</b>

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	952480	5.1400e-003	0.0439	0.0187	2.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	50.8279	50.8279	9.7000e-004	9.3000e-004	51.1300
Congregate Care (Assisted Living)	952476	5.1400e-003	0.0439	0.0187	2.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	50.8277	50.8277	9.7000e-004	9.3000e-004	51.1298
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	2.0817e+006	0.0112	0.1020	0.0857	6.1000e-004		7.7600e-003	7.7600e-003		7.7600e-003	7.7600e-003	0.0000	111.0874	111.0874	2.1300e-003	2.0400e-003	111.7476
Medical Office Building	1.55681e+006	8.3900e-003	0.0763	0.0641	4.6000e-004		5.8000e-003	5.8000e-003		5.8000e-003	5.8000e-003	0.0000	83.0773	83.0773	1.5900e-003	1.5200e-003	83.5710
<b>Total</b>		<b>0.0299</b>	<b>0.2661</b>	<b>0.1872</b>	<b>1.6300e-003</b>		<b>0.0207</b>	<b>0.0207</b>		<b>0.0207</b>	<b>0.0207</b>	<b>0.0000</b>	<b>295.8204</b>	<b>295.8204</b>	<b>5.6600e-003</b>	<b>5.4200e-003</b>	<b>297.5783</b>

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	419906	166.2730	6.2900e-003	7.6000e-004	166.6572
Congregate Care (Assisted Living)	419905	166.2729	6.2900e-003	7.6000e-004	166.6571
Enclosed Parking with Elevator	2.25794e+006	894.0935	0.0338	4.1000e-003	896.1593
High Turnover (Sit Down Restaurant)	513630	203.3857	7.6900e-003	9.3000e-004	203.8556
Medical Office Building	2.06719e+006	818.5598	0.0309	3.7500e-003	820.4511
<b>Total</b>		<b>2,248.5850</b>	<b>0.0850</b>	<b>0.0103</b>	<b>2,253.7803</b>

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	419906	166.2730	6.2900e-003	7.6000e-004	166.6572
Congregate Care (Assisted Living)	419905	166.2729	6.2900e-003	7.6000e-004	166.6571
Enclosed Parking with Elevator	2.25794e+006	894.0935	0.0338	4.1000e-003	896.1593
High Turnover (Sit Down Restaurant)	513630	203.3857	7.6900e-003	9.3000e-004	203.8556
Medical Office Building	2.06719e+006	818.5598	0.0309	3.7500e-003	820.4511
<b>Total</b>		<b>2,248.5850</b>	<b>0.0850</b>	<b>0.0103</b>	<b>2,253.7803</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4412	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372
Unmitigated	1.4412	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372

## 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	0.1348					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2496					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	0.0568	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372
Total	1.4412	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372

## Affinity-Proposed - Los Angeles-South Coast County, Annual

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 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	0.1348					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2496					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	0.0568	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372
Total	1.4412	0.0216	1.8731	1.0000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	3.0632	3.0632	2.9600e-003	0.0000	3.1372

## 7.0 Water Detail

## 7.1 Mitigation Measures Water



## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	99.2044	0.5834	0.0141	117.9987
Unmitigated	99.2044	0.5834	0.0141	117.9987

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.60975 / 0.1022	14.7335	0.0856	2.0700e-003	17.4899
Congregate Care (Assisted Living)	1.6352 / 0.1022	9.3995	0.0536	1.3000e-003	11.1270
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	5.83562 / 0.1022	32.3895	0.1913	4.6300e-003	38.5519
Medical Office Building	7.7161 / 0.1022	42.6819	0.2530	6.1200e-003	50.8298
<b>Total</b>		<b>99.2044</b>	<b>0.5834</b>	<b>0.0141</b>	<b>117.9987</b>

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.60975 / 0.1022	14.7335	0.0856	2.0700e-003	17.4899
Congregate Care (Assisted Living)	1.6352 / 0.1022	9.3995	0.0536	1.3000e-003	11.1270
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	5.83562 / 0.1022	32.3895	0.1913	4.6300e-003	38.5519
Medical Office Building	7.7161 / 0.1022	42.6819	0.2530	6.1200e-003	50.8298
<b>Total</b>		<b>99.2044</b>	<b>0.5834</b>	<b>0.0141</b>	<b>117.9987</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	363.0839	21.4576	0.0000	899.5249

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	43.7	8.8707	0.5242	0.0000	21.9768
Congregate Care (Assisted Living)	78.47	15.9287	0.9414	0.0000	39.4627
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	35.7	7.2468	0.4283	0.0000	17.9536
Medical Office Building	1630.8	331.0377	19.5638	0.0000	820.1318
<b>Total</b>		<b>363.0839</b>	<b>21.4576</b>	<b>0.0000</b>	<b>899.5249</b>

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****8.2 Waste by Land Use****Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise		0.0000	0.0000	0.0000	0.0000
Congregate Care (Assisted Living)		0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator		0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)		0.0000	0.0000	0.0000	0.0000
Medical Office Building		0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	1	52	215	0.73	Diesel

**Boilers**

## Affinity-Proposed - Los Angeles-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
----------------	--------

**10.1 Stationary Sources****Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (175 - 300 HP)	0.0183	0.0513	0.0468	9.0000e-005		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.5146	8.5146	1.1900e-003	0.0000	8.5445
<b>Total</b>	<b>0.0183</b>	<b>0.0513</b>	<b>0.0468</b>	<b>9.0000e-005</b>		<b>2.7000e-003</b>	<b>2.7000e-003</b>		<b>2.7000e-003</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.5146</b>	<b>8.5146</b>	<b>1.1900e-003</b>	<b>0.0000</b>	<b>8.5445</b>

**11.0 Vegetation**

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**Affinity-Proposed**  
**Los Angeles-South Coast County, Summer**

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	151.00	1000sqft	0.88	151,000.00	0
Enclosed Parking with Elevator	415.06	1000sqft	0.20	415,063.00	0
High Turnover (Sit Down Restaurant)	3.00	1000sqft	0.02	3,000.00	0
Apartments Mid Rise	95.00	Dwelling Unit	0.45	98,576.00	111
Congregate Care (Assisted Living)	86.00	Dwelling Unit	0.45	85,800.00	111

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2024
Utility Company	Pasadena Water and Power				
CO2 Intensity (lb/MWhr)	872.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - See SWAPE comment on "Unsubstantiated Changes to CH4, CO2, and N2O Intensity Factors."

Land Use - Consistent with the DEIR's model.

Construction Phase - See SWAPE comment on "Unsubstantiated Change to Architectural Coating Phase Length."

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Grading - Consistent with the DEIR's model.

Demolition - Consistent with the DEIR's model.

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Trips and VMT - See SWAPE comment on "Underestimated Number of Building Construction Hauling Trips," and "Unsubstantiated Reductions to Number of Worker and Vendor Trips."

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Vehicle Trips - See SWAPE comment on "Underestimated Number of Saturday and Sunday Vehicle Trips," and "Unsubstantiated Reduction to Operational Vehicle Trip Lengths."

Fleet Mix - See SWAPE comment on "Unsubstantiated Changes to Operational Vehicle Fleet Mix Percentages."

Woodstoves - Consistent with the DEIR's model.

Energy Use - Consistent with the DEIR's model.

Water And Wastewater - Consistent with the DEIR's model.

Stationary Sources - Emergency Generators and Fire Pumps - Consistent with the DEIR's model.

Construction Off-road Equipment Mitigation - Consistent with the DEIR's model.

Waste Mitigation - Consistent with the DEIR's model.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	640.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	4.00	108.00
tblConstructionPhase	NumDays	2.00	26.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/5/2024	11/27/2025
tblConstructionPhase	PhaseEndDate	1/22/2024	11/15/2025
tblConstructionPhase	PhaseEndDate	4/7/2023	5/27/2023
tblConstructionPhase	PhaseEndDate	4/17/2023	10/31/2023
tblConstructionPhase	PhaseEndDate	4/11/2023	6/27/2023

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	1/23/2024	11/16/2025
tblConstructionPhase	PhaseStartDate	4/18/2023	11/1/2023
tblConstructionPhase	PhaseStartDate	4/12/2023	6/28/2023
tblConstructionPhase	PhaseStartDate	4/8/2023	5/28/2023
tblEnergyUse	LightingElect	741.44	851.37
tblEnergyUse	LightingElect	741.44	940.47
tblEnergyUse	LightingElect	7.87	31.14
tblEnergyUse	LightingElect	3.77	4.13
tblEnergyUse	NT24E	3,054.10	3,506.90
tblEnergyUse	NT24E	3,054.10	3,873.90
tblEnergyUse	NT24E	28.16	111.42
tblEnergyUse	NT24E	4.62	5.06
tblEnergyUse	NT24NG	6,384.00	4,898.50
tblEnergyUse	NT24NG	6,384.00	5,411.10
tblEnergyUse	NT24NG	187.78	565.70
tblEnergyUse	T24E	53.81	61.79
tblEnergyUse	T24E	53.81	68.25
tblEnergyUse	T24E	7.24	28.65
tblEnergyUse	T24E	4.11	4.50
tblEnergyUse	T24NG	6,682.59	5,127.60
tblEnergyUse	T24NG	6,682.59	5,664.20
tblEnergyUse	T24NG	42.55	128.20
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	80.75	0.00
tblFireplaces	NumberGas	73.10	0.00
tblFireplaces	NumberNoFireplace	9.50	0.00



## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblFireplaces	NumberNoFireplace	8.60	0.00
tblFireplaces	NumberWood	4.75	0.00
tblFireplaces	NumberWood	4.30	0.00
tblGrading	MaterialExported	0.00	184,013.00
tblGrading	MaterialExported	0.00	480.00
tblLandUse	LandUseSquareFeet	415,060.00	415,063.00
tblLandUse	LandUseSquareFeet	95,000.00	98,576.00
tblLandUse	LandUseSquareFeet	86,000.00	85,800.00
tblLandUse	LotAcreage	3.47	0.88
tblLandUse	LotAcreage	9.53	0.20
tblLandUse	LotAcreage	0.07	0.02
tblLandUse	LotAcreage	2.50	0.45
tblLandUse	LotAcreage	5.38	0.45
tblLandUse	Population	272.00	111.00
tblLandUse	Population	246.00	111.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	7.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	215.00

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	52.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	209.00	600.00
tblTripsAndVMT	HaulingTripNumber	23,002.00	26,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	795.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	20.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	43.00	0.00
tblVehicleTrips	PB_TP	10.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	37.00	100.00
tblVehicleTrips	PR_TP	60.00	100.00
tblVehicleTrips	ST_TR	4.91	5.84
tblVehicleTrips	ST_TR	2.93	10.32
tblVehicleTrips	ST_TR	122.40	792.50
tblVehicleTrips	ST_TR	8.57	16.86
tblVehicleTrips	SU_TR	4.09	6.73
tblVehicleTrips	SU_TR	3.15	15.33

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblVehicleTrips	SU_TR	142.64	1,274.78
tblVehicleTrips	SU_TR	1.42	3.86
tblWater	IndoorWaterUseRate	6,189,632.43	2,609,750.00
tblWater	IndoorWaterUseRate	5,603,246.20	1,635,200.00
tblWater	IndoorWaterUseRate	910,601.14	5,835,620.00
tblWater	IndoorWaterUseRate	18,947,561.17	7,716,100.00
tblWater	OutdoorWaterUseRate	3,902,159.58	102,200.00
tblWater	OutdoorWaterUseRate	3,532,481.30	102,200.00
tblWater	OutdoorWaterUseRate	58,123.48	102,200.00
tblWater	OutdoorWaterUseRate	3,609,059.27	102,200.00
tblWoodstoves	NumberCatalytic	4.75	0.00
tblWoodstoves	NumberCatalytic	4.30	0.00
tblWoodstoves	NumberNoncatalytic	4.75	0.00
tblWoodstoves	NumberNoncatalytic	4.30	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

**2.0 Emissions Summary**

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## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****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					
2023	6.3441	46.1954	66.7450	0.1464	4.6862	1.9309	6.6171	1.2593	1.8837	3.1430	0.0000	14,311.57 23	14,311.57 23	2.2512	0.7099	14,467.94 58
2024	5.9441	43.6309	65.6460	0.1451	4.6862	1.6983	6.3844	1.2593	1.6553	2.9146	0.0000	14,204.12 05	14,204.12 05	1.3331	0.4004	14,356.75 17
2025	270.5513	41.1115	64.6286	0.1436	4.6862	1.4763	6.1625	1.2593	1.4380	2.6973	0.0000	14,077.98 39	14,077.98 39	1.3041	0.3897	14,226.72 29
Maximum	270.5513	46.1954	66.7450	0.1464	4.6862	1.9309	6.6171	1.2593	1.8837	3.1430	0.0000	14,311.57 23	14,311.57 23	2.2512	0.7099	14,467.94 58

**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					
2023	6.3441	46.1954	66.7450	0.1464	4.6862	1.9309	6.6171	1.2593	1.8837	3.1430	0.0000	14,311.57 23	14,311.57 23	2.2512	0.7099	14,467.94 58
2024	5.9441	43.6309	65.6460	0.1451	4.6862	1.6983	6.3844	1.2593	1.6553	2.9146	0.0000	14,204.12 05	14,204.12 05	1.3331	0.4004	14,356.75 17
2025	270.5513	41.1115	64.6286	0.1436	4.6862	1.4763	6.1625	1.2593	1.4380	2.6973	0.0000	14,077.98 39	14,077.98 39	1.3041	0.3897	14,226.72 29
Maximum	270.5513	46.1954	66.7450	0.1464	4.6862	1.9309	6.6171	1.2593	1.8837	3.1430	0.0000	14,311.57 23	14,311.57 23	2.2512	0.7099	14,467.94 58

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656
Energy	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916
Mobile	34.3842	35.4629	358.6770	0.8041	84.1443	0.5701	84.7144	22.4135	0.5292	22.9427		83,388.6637	83,388.6637	5.2550	3.2425	84,486.3068
Stationary	0.7056	1.9723	1.7993	3.3900e-003		0.1038	0.1038		0.1038	0.1038		360.9911	360.9911	0.0506		362.2564
Total	43.2934	39.0660	376.4863	0.8172	84.1443	0.8700	85.0143	22.4135	0.8291	23.2426	0.0000	85,563.4409	85,563.4409	5.3659	3.2753	86,673.6204

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656
Energy	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916
Mobile	34.3842	35.4629	358.6770	0.8041	84.1443	0.5701	84.7144	22.4135	0.5292	22.9427		83,388.6637	83,388.6637	5.2550	3.2425	84,486.3068
Stationary	0.7056	1.9723	1.7993	3.3900e-003		0.1038	0.1038		0.1038	0.1038		360.9911	360.9911	0.0506		362.2564
<b>Total</b>	<b>43.2934</b>	<b>39.0660</b>	<b>376.4863</b>	<b>0.8172</b>	<b>84.1443</b>	<b>0.8700</b>	<b>85.0143</b>	<b>22.4135</b>	<b>0.8291</b>	<b>23.2426</b>	<b>0.0000</b>	<b>85,563.4409</b>	<b>85,563.4409</b>	<b>5.3659</b>	<b>3.2753</b>	<b>86,673.6204</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## 3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/13/2023	5/27/2023	6	66	
2	Site Preparation	Site Preparation	5/28/2023	6/27/2023	6	26	
3	Grading	Grading	6/28/2023	10/31/2023	6	108	
4	Building Construction	Building Construction	11/1/2023	11/15/2025	6	640	

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

5	Architectural Coating	Architectural Coating	11/16/2025	11/27/2025	6	10
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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.2

Residential Indoor: 373,361; Residential Outdoor: 124,454; Non-Residential Indoor: 231,000; Non-Residential Outdoor: 77,000; Striped Parking Area: 24,904 (Architectural Coating – sqft)

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	12.00	78	0.48
Demolition	Excavators	1	12.00	158	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	1	12.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	1	12.00	84	0.74
Grading	Graders	0	8.00	187	0.41
Site Preparation	Graders	0	8.00	187	0.41
Demolition	Off-Highway Trucks	1	12.00	402	0.38
Site Preparation	Excavators	1	12.00	158	0.38
Site Preparation	Off-Highway Trucks	1	12.00	402	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	12.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	12.00	97	0.37
Grading	Bore/Drill Rigs	2	12.00	221	0.50
Site Preparation	Tractors/Loaders/Backhoes	2	12.00	97	0.37



## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Building Construction	Welders	3	12.00	46	0.45
Grading	Cranes	2	12.00	231	0.29
Grading	Generator Sets	1	12.00	84	0.74
Grading	Plate Compactors	1	12.00	8	0.43
Grading	Excavators	1	12.00	158	0.38
Building Construction	Air Compressors	2	12.00	78	0.48
Building Construction	Skid Steer Loaders	2	12.00	65	0.37
Building Construction	Pumps	3	12.00	84	0.74
Building Construction	Excavators	1	12.00	158	0.38

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	600.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	60.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	26,400.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	354.00	113.00	795.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	71.00	0.00	0.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****Water Exposed Area**

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6848	0.0000	0.6848	0.1037	0.0000	0.1037			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933		3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>0.6848</b>	<b>0.5362</b>	<b>1.2210</b>	<b>0.1037</b>	<b>0.4933</b>	<b>0.5970</b>		<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

**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	0.0123	0.4193	0.1808	1.5100e-003	0.0399	1.9400e-003	0.0419	0.0110	1.8600e-003	0.0128		165.0940	165.0940	8.6000e-003	0.0262	173.1174
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
Worker	0.0320	0.0223	0.3624	9.9000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		101.2613	101.2613	2.5200e-003	2.3100e-003	102.0121
<b>Total</b>	<b>0.0443</b>	<b>0.4416</b>	<b>0.5431</b>	<b>2.5000e-003</b>	<b>0.1517</b>	<b>2.6100e-003</b>	<b>0.1543</b>	<b>0.0406</b>	<b>2.4800e-003</b>	<b>0.0431</b>		<b>266.3553</b>	<b>266.3553</b>	<b>0.0111</b>	<b>0.0285</b>	<b>275.1295</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Demolition - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6848	0.0000	0.6848	0.1037	0.0000	0.1037			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933	0.0000	3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>0.6848</b>	<b>0.5362</b>	<b>1.2210</b>	<b>0.1037</b>	<b>0.4933</b>	<b>0.5970</b>	<b>0.0000</b>	<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

**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	0.0123	0.4193	0.1808	1.5100e-003	0.0399	1.9400e-003	0.0419	0.0110	1.8600e-003	0.0128		165.0940	165.0940	8.6000e-003	0.0262	173.1174
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
Worker	0.0320	0.0223	0.3624	9.9000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		101.2613	101.2613	2.5200e-003	2.3100e-003	102.0121
<b>Total</b>	<b>0.0443</b>	<b>0.4416</b>	<b>0.5431</b>	<b>2.5000e-003</b>	<b>0.1517</b>	<b>2.6100e-003</b>	<b>0.1543</b>	<b>0.0406</b>	<b>2.4800e-003</b>	<b>0.0431</b>		<b>266.3553</b>	<b>266.3553</b>	<b>0.0111</b>	<b>0.0285</b>	<b>275.1295</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0900e-003	0.0000	2.0900e-003	3.2000e-004	0.0000	3.2000e-004			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933		3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>2.0900e-003</b>	<b>0.5362</b>	<b>0.5383</b>	<b>3.2000e-004</b>	<b>0.4933</b>	<b>0.4936</b>		<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

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	3.1200e-003	0.1064	0.0459	3.8000e-004	0.0101	4.9000e-004	0.0106	2.7800e-003	4.7000e-004	3.2500e-003		41.9085	41.9085	2.1800e-003	6.6500e-003	43.9452
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
Worker	0.0320	0.0223	0.3624	9.9000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		101.2613	101.2613	2.5200e-003	2.3100e-003	102.0121
<b>Total</b>	<b>0.0351</b>	<b>0.1288</b>	<b>0.4083</b>	<b>1.3700e-003</b>	<b>0.1219</b>	<b>1.1600e-003</b>	<b>0.1231</b>	<b>0.0324</b>	<b>1.0900e-003</b>	<b>0.0335</b>		<b>143.1698</b>	<b>143.1698</b>	<b>4.7000e-003</b>	<b>8.9600e-003</b>	<b>145.9573</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.3 Site Preparation - 2023

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					2.0900e-003	0.0000	2.0900e-003	3.2000e-004	0.0000	3.2000e-004			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933	0.0000	3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>2.0900e-003</b>	<b>0.5362</b>	<b>0.5383</b>	<b>3.2000e-004</b>	<b>0.4933</b>	<b>0.4936</b>	<b>0.0000</b>	<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

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	3.1200e-003	0.1064	0.0459	3.8000e-004	0.0101	4.9000e-004	0.0106	2.7800e-003	4.7000e-004	3.2500e-003		41.9085	41.9085	2.1800e-003	6.6500e-003	43.9452
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
Worker	0.0320	0.0223	0.3624	9.9000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		101.2613	101.2613	2.5200e-003	2.3100e-003	102.0121
<b>Total</b>	<b>0.0351</b>	<b>0.1288</b>	<b>0.4083</b>	<b>1.3700e-003</b>	<b>0.1219</b>	<b>1.1600e-003</b>	<b>0.1231</b>	<b>0.0324</b>	<b>1.0900e-003</b>	<b>0.0335</b>		<b>143.1698</b>	<b>143.1698</b>	<b>4.7000e-003</b>	<b>8.9600e-003</b>	<b>145.9573</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Grading - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1927	0.0000	0.1927	0.0292	0.0000	0.0292			0.0000			0.0000
Off-Road	2.9534	28.9128	29.0211	0.0735		1.2227	1.2227		1.1415	1.1415		7,070.3245	7,070.3245	2.0142		7,120.6792
<b>Total</b>	<b>2.9534</b>	<b>28.9128</b>	<b>29.0211</b>	<b>0.0735</b>	<b>0.1927</b>	<b>1.2227</b>	<b>1.4154</b>	<b>0.0292</b>	<b>1.1415</b>	<b>1.1707</b>		<b>7,070.3245</b>	<b>7,070.3245</b>	<b>2.0142</b>		<b>7,120.6792</b>

**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	0.3302	11.2743	4.8605	0.0405	1.0736	0.0522	1.1258	0.2947	0.0499	0.3446		4,439.1952	4,439.1952	0.2312	0.7046	4,654.9344
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
Worker	0.0737	0.0514	0.8335	2.2800e-003	0.2571	1.5500e-003	0.2586	0.0682	1.4300e-003	0.0696		232.9009	232.9009	5.8000e-003	5.3100e-003	234.6278
<b>Total</b>	<b>0.4038</b>	<b>11.3257</b>	<b>5.6940</b>	<b>0.0428</b>	<b>1.3307</b>	<b>0.0537</b>	<b>1.3844</b>	<b>0.3629</b>	<b>0.0513</b>	<b>0.4142</b>		<b>4,672.0961</b>	<b>4,672.0961</b>	<b>0.2370</b>	<b>0.7099</b>	<b>4,889.5622</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1927	0.0000	0.1927	0.0292	0.0000	0.0292			0.0000			0.0000
Off-Road	2.9534	28.9128	29.0211	0.0735		1.2227	1.2227		1.1415	1.1415	0.0000	7,070.3245	7,070.3245	2.0142		7,120.6792
<b>Total</b>	<b>2.9534</b>	<b>28.9128</b>	<b>29.0211</b>	<b>0.0735</b>	<b>0.1927</b>	<b>1.2227</b>	<b>1.4154</b>	<b>0.0292</b>	<b>1.1415</b>	<b>1.1707</b>	<b>0.0000</b>	<b>7,070.3245</b>	<b>7,070.3245</b>	<b>2.0142</b>		<b>7,120.6792</b>

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	0.3302	11.2743	4.8605	0.0405	1.0736	0.0522	1.1258	0.2947	0.0499	0.3446		4,439.1952	4,439.1952	0.2312	0.7046	4,654.9344
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
Worker	0.0737	0.0514	0.8335	2.2800e-003	0.2571	1.5500e-003	0.2586	0.0682	1.4300e-003	0.0696		232.9009	232.9009	5.8000e-003	5.3100e-003	234.6278
<b>Total</b>	<b>0.4038</b>	<b>11.3257</b>	<b>5.6940</b>	<b>0.0428</b>	<b>1.3307</b>	<b>0.0537</b>	<b>1.3844</b>	<b>0.3629</b>	<b>0.0513</b>	<b>0.4142</b>		<b>4,672.0961</b>	<b>4,672.0961</b>	<b>0.2370</b>	<b>0.7099</b>	<b>4,889.5622</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Building Construction - 2023****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	5.0787	41.0105	52.2120	0.0902		1.8850	1.8850		1.8406	1.8406		8,441.1726	8,441.1726	1.1936		8,471.0116
<b>Total</b>	<b>5.0787</b>	<b>41.0105</b>	<b>52.2120</b>	<b>0.0902</b>		<b>1.8850</b>	<b>1.8850</b>		<b>1.8406</b>	<b>1.8406</b>		<b>8,441.1726</b>	<b>8,441.1726</b>	<b>1.1936</b>		<b>8,471.0116</b>

**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	1.6800e-003	0.0573	0.0247	2.1000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.5000e-004	1.7500e-003		22.5586	22.5586	1.1700e-003	3.5800e-003	23.6549
Vendor	0.1301	4.3373	1.6803	0.0210	0.7238	0.0218	0.7456	0.2084	0.0209	0.2293		2,263.1920	2,263.1920	0.0758	0.3254	2,362.0515
Worker	1.1336	0.7903	12.8280	0.0350	3.9569	0.0239	3.9808	1.0494	0.0220	1.0714		3,584.6492	3,584.6492	0.0893	0.0817	3,611.2278
<b>Total</b>	<b>1.2654</b>	<b>5.1849</b>	<b>14.5330</b>	<b>0.0563</b>	<b>4.6862</b>	<b>0.0460</b>	<b>4.7321</b>	<b>1.2593</b>	<b>0.0431</b>	<b>1.3024</b>		<b>5,870.3998</b>	<b>5,870.3998</b>	<b>0.1663</b>	<b>0.4107</b>	<b>5,996.9342</b>



## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2023

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	5.0787	41.0105	52.2120	0.0902		1.8850	1.8850		1.8406	1.8406	0.0000	8,441.1726	8,441.1726	1.1936		8,471.0116
<b>Total</b>	<b>5.0787</b>	<b>41.0105</b>	<b>52.2120</b>	<b>0.0902</b>		<b>1.8850</b>	<b>1.8850</b>		<b>1.8406</b>	<b>1.8406</b>	<b>0.0000</b>	<b>8,441.1726</b>	<b>8,441.1726</b>	<b>1.1936</b>		<b>8,471.0116</b>

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	1.6800e-003	0.0573	0.0247	2.1000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.5000e-004	1.7500e-003		22.5586	22.5586	1.1700e-003	3.5800e-003	23.6549
Vendor	0.1301	4.3373	1.6803	0.0210	0.7238	0.0218	0.7456	0.2084	0.0209	0.2293		2,263.1920	2,263.1920	0.0758	0.3254	2,362.0515
Worker	1.1336	0.7903	12.8280	0.0350	3.9569	0.0239	3.9808	1.0494	0.0220	1.0714		3,584.6492	3,584.6492	0.0893	0.0817	3,611.2278
<b>Total</b>	<b>1.2654</b>	<b>5.1849</b>	<b>14.5330</b>	<b>0.0563</b>	<b>4.6862</b>	<b>0.0460</b>	<b>4.7321</b>	<b>1.2593</b>	<b>0.0431</b>	<b>1.3024</b>		<b>5,870.3998</b>	<b>5,870.3998</b>	<b>0.1663</b>	<b>0.4107</b>	<b>5,996.9342</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2024

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	4.7598	38.5217	52.0362	0.0902		1.6532	1.6532		1.6130	1.6130		8,441.9229	8,441.9229	1.1751		8,471.2992
<b>Total</b>	<b>4.7598</b>	<b>38.5217</b>	<b>52.0362</b>	<b>0.0902</b>		<b>1.6532</b>	<b>1.6532</b>		<b>1.6130</b>	<b>1.6130</b>		<b>8,441.9229</b>	<b>8,441.9229</b>	<b>1.1751</b>		<b>8,471.2992</b>

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	1.6700e-003	0.0573	0.0249	2.0000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.6000e-004	1.7500e-003		22.2386	22.2386	1.1900e-003	3.5300e-003	23.3204
Vendor	0.1261	4.3462	1.6445	0.0207	0.7238	0.0220	0.7458	0.2084	0.0210	0.2294		2,229.2030	2,229.2030	0.0761	0.3208	2,326.7153
Worker	1.0566	0.7058	11.9404	0.0340	3.9569	0.0229	3.9798	1.0494	0.0211	1.0705		3,510.7560	3,510.7560	0.0808	0.0760	3,535.4169
<b>Total</b>	<b>1.1843</b>	<b>5.1092</b>	<b>13.6098</b>	<b>0.0549</b>	<b>4.6862</b>	<b>0.0451</b>	<b>4.7313</b>	<b>1.2593</b>	<b>0.0423</b>	<b>1.3016</b>		<b>5,762.1976</b>	<b>5,762.1976</b>	<b>0.1581</b>	<b>0.4004</b>	<b>5,885.4525</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2024

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	4.7598	38.5217	52.0362	0.0902		1.6532	1.6532		1.6130	1.6130	0.0000	8,441.9229	8,441.9229	1.1751		8,471.2992
<b>Total</b>	<b>4.7598</b>	<b>38.5217</b>	<b>52.0362</b>	<b>0.0902</b>		<b>1.6532</b>	<b>1.6532</b>		<b>1.6130</b>	<b>1.6130</b>	<b>0.0000</b>	<b>8,441.9229</b>	<b>8,441.9229</b>	<b>1.1751</b>		<b>8,471.2992</b>

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	1.6700e-003	0.0573	0.0249	2.0000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.6000e-004	1.7500e-003		22.2386	22.2386	1.1900e-003	3.5300e-003	23.3204
Vendor	0.1261	4.3462	1.6445	0.0207	0.7238	0.0220	0.7458	0.2084	0.0210	0.2294		2,229.2030	2,229.2030	0.0761	0.3208	2,326.7153
Worker	1.0566	0.7058	11.9404	0.0340	3.9569	0.0229	3.9798	1.0494	0.0211	1.0705		3,510.7560	3,510.7560	0.0808	0.0760	3,535.4169
<b>Total</b>	<b>1.1843</b>	<b>5.1092</b>	<b>13.6098</b>	<b>0.0549</b>	<b>4.6862</b>	<b>0.0451</b>	<b>4.7313</b>	<b>1.2593</b>	<b>0.0423</b>	<b>1.3016</b>		<b>5,762.1976</b>	<b>5,762.1976</b>	<b>0.1581</b>	<b>0.4004</b>	<b>5,885.4525</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Building Construction - 2025****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	4.4562	36.0949	51.8611	0.0902		1.4322	1.4322		1.3966	1.3966		8,442.2185	8,442.2185	1.1534		8,471.0544
<b>Total</b>	<b>4.4562</b>	<b>36.0949</b>	<b>51.8611</b>	<b>0.0902</b>		<b>1.4322</b>	<b>1.4322</b>		<b>1.3966</b>	<b>1.3966</b>		<b>8,442.2185</b>	<b>8,442.2185</b>	<b>1.1534</b>		<b>8,471.0544</b>

**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	1.6600e-003	0.0570	0.0250	2.0000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.6000e-004	1.7500e-003		21.8439	21.8439	1.2000e-003	3.4700e-003	22.9077
Vendor	0.1226	4.3256	1.6143	0.0203	0.7238	0.0220	0.7459	0.2084	0.0211	0.2295		2,189.0686	2,189.0686	0.0767	0.3153	2,284.9396
Worker	0.9882	0.6342	11.1282	0.0329	3.9569	0.0219	3.9787	1.0494	0.0201	1.0695		3,424.8528	3,424.8528	0.0728	0.0710	3,447.8211
<b>Total</b>	<b>1.1124</b>	<b>5.0167</b>	<b>12.7675</b>	<b>0.0534</b>	<b>4.6862</b>	<b>0.0441</b>	<b>4.7303</b>	<b>1.2593</b>	<b>0.0414</b>	<b>1.3007</b>		<b>5,635.7653</b>	<b>5,635.7653</b>	<b>0.1507</b>	<b>0.3897</b>	<b>5,755.6684</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Building Construction - 2025****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	4.4562	36.0949	51.8611	0.0902		1.4322	1.4322		1.3966	1.3966	0.0000	8,442.2185	8,442.2185	1.1534		8,471.0544
<b>Total</b>	<b>4.4562</b>	<b>36.0949</b>	<b>51.8611</b>	<b>0.0902</b>		<b>1.4322</b>	<b>1.4322</b>		<b>1.3966</b>	<b>1.3966</b>	<b>0.0000</b>	<b>8,442.2185</b>	<b>8,442.2185</b>	<b>1.1534</b>		<b>8,471.0544</b>

**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	1.6600e-003	0.0570	0.0250	2.0000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.6000e-004	1.7500e-003		21.8439	21.8439	1.2000e-003	3.4700e-003	22.9077
Vendor	0.1226	4.3256	1.6143	0.0203	0.7238	0.0220	0.7459	0.2084	0.0211	0.2295		2,189.0686	2,189.0686	0.0767	0.3153	2,284.9396
Worker	0.9882	0.6342	11.1282	0.0329	3.9569	0.0219	3.9787	1.0494	0.0201	1.0695		3,424.8528	3,424.8528	0.0728	0.0710	3,447.8211
<b>Total</b>	<b>1.1124</b>	<b>5.0167</b>	<b>12.7675</b>	<b>0.0534</b>	<b>4.6862</b>	<b>0.0441</b>	<b>4.7303</b>	<b>1.2593</b>	<b>0.0414</b>	<b>1.3007</b>		<b>5,635.7653</b>	<b>5,635.7653</b>	<b>0.1507</b>	<b>0.3897</b>	<b>5,755.6684</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2025****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	269.6696					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6834	4.5820	7.2365	0.0119		0.2060	0.2060		0.2060	0.2060		1,125.792 2	1,125.792 2	0.0614		1,127.327 5
<b>Total</b>	<b>270.3531</b>	<b>4.5820</b>	<b>7.2365</b>	<b>0.0119</b>		<b>0.2060</b>	<b>0.2060</b>		<b>0.2060</b>	<b>0.2060</b>		<b>1,125.792 2</b>	<b>1,125.792 2</b>	<b>0.0614</b>		<b>1,127.327 5</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Worker	0.1982	0.1272	2.2319	6.5900e-003	0.7936	4.3800e-003	0.7980	0.2105	4.0300e-003	0.2145		686.9055	686.9055	0.0146	0.0142	691.5121
<b>Total</b>	<b>0.1982</b>	<b>0.1272</b>	<b>2.2319</b>	<b>6.5900e-003</b>	<b>0.7936</b>	<b>4.3800e-003</b>	<b>0.7980</b>	<b>0.2105</b>	<b>4.0300e-003</b>	<b>0.2145</b>		<b>686.9055</b>	<b>686.9055</b>	<b>0.0146</b>	<b>0.0142</b>	<b>691.5121</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2025****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	269.6696					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6834	4.5820	7.2365	0.0119		0.2060	0.2060		0.2060	0.2060	0.0000	1,125.792 2	1,125.792 2	0.0614		1,127.327 5
<b>Total</b>	<b>270.3531</b>	<b>4.5820</b>	<b>7.2365</b>	<b>0.0119</b>		<b>0.2060</b>	<b>0.2060</b>		<b>0.2060</b>	<b>0.2060</b>	<b>0.0000</b>	<b>1,125.792 2</b>	<b>1,125.792 2</b>	<b>0.0614</b>		<b>1,127.327 5</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Worker	0.1982	0.1272	2.2319	6.5900e-003	0.7936	4.3800e-003	0.7980	0.2105	4.0300e-003	0.2145		686.9055	686.9055	0.0146	0.0142	691.5121
<b>Total</b>	<b>0.1982</b>	<b>0.1272</b>	<b>2.2319</b>	<b>6.5900e-003</b>	<b>0.7936</b>	<b>4.3800e-003</b>	<b>0.7980</b>	<b>0.2105</b>	<b>4.0300e-003</b>	<b>0.2145</b>		<b>686.9055</b>	<b>686.9055</b>	<b>0.0146</b>	<b>0.0142</b>	<b>691.5121</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 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	34.3842	35.4629	358.6770	0.8041	84.1443	0.5701	84.7144	22.4135	0.5292	22.9427		83,388.66 37	83,388.66 37	5.2550	3.2425	84,486.30 68
Unmitigated	34.3842	35.4629	358.6770	0.8041	84.1443	0.5701	84.7144	22.4135	0.5292	22.9427		83,388.66 37	83,388.66 37	5.2550	3.2425	84,486.30 68

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	516.80	554.80	639.35	2,077,487	2,077,487
Congregate Care (Assisted Living)	223.60	887.52	1318.38	1,827,709	1,827,709
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	336.54	2,377.50	3824.34	3,612,885	3,612,885
Medical Office Building	5,254.80	2,545.86	582.86	16,118,406	16,118,406
Total	6,331.74	6,365.68	6,364.93	23,636,488	23,636,488

## 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 Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0
Congregate Care (Assisted)	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0



## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

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
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	100	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	100	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Congregate Care (Assisted Living)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Enclosed Parking with Elevator	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Medical Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Natural Gas Mitigated	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916
Natural Gas Unmitigated	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916

## 5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2609.53	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0039	307.0039	5.8800e-003	5.6300e-003	308.8282
Congregate Care (Assisted Living)	2609.52	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0027	307.0027	5.8800e-003	5.6300e-003	308.8270
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	5703.29	0.0615	0.5592	0.4697	3.3500e-003		0.0425	0.0425		0.0425	0.0425		670.9750	670.9750	0.0129	0.0123	674.9623
Medical Office Building	4265.23	0.0460	0.4182	0.3513	2.5100e-003		0.0318	0.0318		0.0318	0.0318		501.7921	501.7921	9.6200e-003	9.2000e-003	504.7740
<b>Total</b>		<b>0.1638</b>	<b>1.4583</b>	<b>1.0256</b>	<b>8.9400e-003</b>		<b>0.1132</b>	<b>0.1132</b>		<b>0.1132</b>	<b>0.1132</b>		<b>1,786.7737</b>	<b>1,786.7737</b>	<b>0.0342</b>	<b>0.0328</b>	<b>1,797.3916</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.60953	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0039	307.0039	5.8800e-003	5.6300e-003	308.8282
Congregate Care (Assisted Living)	2.60952	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0027	307.0027	5.8800e-003	5.6300e-003	308.8270
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	5.70329	0.0615	0.5592	0.4697	3.3500e-003		0.0425	0.0425		0.0425	0.0425		670.9750	670.9750	0.0129	0.0123	674.9623
Medical Office Building	4.26523	0.0460	0.4182	0.3513	2.5100e-003		0.0318	0.0318		0.0318	0.0318		501.7921	501.7921	9.6200e-003	9.2000e-003	504.7740
<b>Total</b>		<b>0.1638</b>	<b>1.4583</b>	<b>1.0256</b>	<b>8.9400e-003</b>		<b>0.1132</b>	<b>0.1132</b>		<b>0.1132</b>	<b>0.1132</b>		<b>1,786.7737</b>	<b>1,786.7737</b>	<b>0.0342</b>	<b>0.0328</b>	<b>1,797.3916</b>

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

## Affinity-Proposed - Los Angeles-South Coast County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656
Unmitigated	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656

**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	0.7388					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8469					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	0.4542	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829		27.0125	27.0125	0.0261		27.6656
<b>Total</b>	<b>8.0398</b>	<b>0.1725</b>	<b>14.9845</b>	<b>7.9000e-004</b>		<b>0.0829</b>	<b>0.0829</b>		<b>0.0829</b>	<b>0.0829</b>	<b>0.0000</b>	<b>27.0125</b>	<b>27.0125</b>	<b>0.0261</b>	<b>0.0000</b>	<b>27.6656</b>

## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 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	0.7388					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8469					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	0.4542	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829		27.0125	27.0125	0.0261		27.6656
Total	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

## 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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## Affinity-Proposed - Los Angeles-South Coast County, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	1	52	215	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**10.1 Stationary Sources****Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (175 - 300 HP)	0.7056	1.9723	1.7993	3.3900e-003		0.1038	0.1038		0.1038	0.1038		360.9911	360.9911	0.0506		362.2564
<b>Total</b>	<b>0.7056</b>	<b>1.9723</b>	<b>1.7993</b>	<b>3.3900e-003</b>		<b>0.1038</b>	<b>0.1038</b>		<b>0.1038</b>	<b>0.1038</b>		<b>360.9911</b>	<b>360.9911</b>	<b>0.0506</b>		<b>362.2564</b>

**11.0 Vegetation**

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**Affinity-Proposed**  
**Los Angeles-South Coast County, Winter**

**1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	151.00	1000sqft	0.88	151,000.00	0
Enclosed Parking with Elevator	415.06	1000sqft	0.20	415,063.00	0
High Turnover (Sit Down Restaurant)	3.00	1000sqft	0.02	3,000.00	0
Apartments Mid Rise	95.00	Dwelling Unit	0.45	98,576.00	111
Congregate Care (Assisted Living)	86.00	Dwelling Unit	0.45	85,800.00	111

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2024
Utility Company	Pasadena Water and Power				
CO2 Intensity (lb/MWhr)	872.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - See SWAPE comment on "Unsubstantiated Changes to CH4, CO2, and N2O Intensity Factors."

Land Use - Consistent with the DEIR's model.

Construction Phase - See SWAPE comment on "Unsubstantiated Change to Architectural Coating Phase Length."

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Grading - Consistent with the DEIR's model.

Demolition - Consistent with the DEIR's model.

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Trips and VMT - See SWAPE comment on "Underestimated Number of Building Construction Hauling Trips," and "Unsubstantiated Reductions to Number of Worker and Vendor Trips."

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Off-road Equipment - Consistent with the DEIR's model.

Vehicle Trips - See SWAPE comment on "Underestimated Number of Saturday and Sunday Vehicle Trips," and "Unsubstantiated Reduction to Operational Vehicle Trip Lengths."

Fleet Mix - See SWAPE comment on "Unsubstantiated Changes to Operational Vehicle Fleet Mix Percentages."

Woodstoves - Consistent with the DEIR's model.

Energy Use - Consistent with the DEIR's model.

Water And Wastewater - Consistent with the DEIR's model.

Stationary Sources - Emergency Generators and Fire Pumps - Consistent with the DEIR's model.

Construction Off-road Equipment Mitigation - Consistent with the DEIR's model.

Waste Mitigation - Consistent with the DEIR's model.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	640.00
tblConstructionPhase	NumDays	20.00	66.00
tblConstructionPhase	NumDays	4.00	108.00
tblConstructionPhase	NumDays	2.00	26.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/5/2024	11/27/2025
tblConstructionPhase	PhaseEndDate	1/22/2024	11/15/2025
tblConstructionPhase	PhaseEndDate	4/7/2023	5/27/2023
tblConstructionPhase	PhaseEndDate	4/17/2023	10/31/2023
tblConstructionPhase	PhaseEndDate	4/11/2023	6/27/2023



## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblConstructionPhase	PhaseStartDate	1/23/2024	11/16/2025
tblConstructionPhase	PhaseStartDate	4/18/2023	11/1/2023
tblConstructionPhase	PhaseStartDate	4/12/2023	6/28/2023
tblConstructionPhase	PhaseStartDate	4/8/2023	5/28/2023
tblEnergyUse	LightingElect	741.44	851.37
tblEnergyUse	LightingElect	741.44	940.47
tblEnergyUse	LightingElect	7.87	31.14
tblEnergyUse	LightingElect	3.77	4.13
tblEnergyUse	NT24E	3,054.10	3,506.90
tblEnergyUse	NT24E	3,054.10	3,873.90
tblEnergyUse	NT24E	28.16	111.42
tblEnergyUse	NT24E	4.62	5.06
tblEnergyUse	NT24NG	6,384.00	4,898.50
tblEnergyUse	NT24NG	6,384.00	5,411.10
tblEnergyUse	NT24NG	187.78	565.70
tblEnergyUse	T24E	53.81	61.79
tblEnergyUse	T24E	53.81	68.25
tblEnergyUse	T24E	7.24	28.65
tblEnergyUse	T24E	4.11	4.50
tblEnergyUse	T24NG	6,682.59	5,127.60
tblEnergyUse	T24NG	6,682.59	5,664.20
tblEnergyUse	T24NG	42.55	128.20
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	80.75	0.00
tblFireplaces	NumberGas	73.10	0.00
tblFireplaces	NumberNoFireplace	9.50	0.00

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblFireplaces	NumberNoFireplace	8.60	0.00
tblFireplaces	NumberWood	4.75	0.00
tblFireplaces	NumberWood	4.30	0.00
tblGrading	MaterialExported	0.00	184,013.00
tblGrading	MaterialExported	0.00	480.00
tblLandUse	LandUseSquareFeet	415,060.00	415,063.00
tblLandUse	LandUseSquareFeet	95,000.00	98,576.00
tblLandUse	LandUseSquareFeet	86,000.00	85,800.00
tblLandUse	LotAcreage	3.47	0.88
tblLandUse	LotAcreage	9.53	0.20
tblLandUse	LotAcreage	0.07	0.02
tblLandUse	LotAcreage	2.50	0.45
tblLandUse	LotAcreage	5.38	0.45
tblLandUse	Population	272.00	111.00
tblLandUse	Population	246.00	111.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Air Compressors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	6.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	7.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblOffRoadEquipment	UsageHours	8.00	12.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	215.00

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	52.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	2.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	209.00	600.00
tblTripsAndVMT	HaulingTripNumber	23,002.00	26,400.00
tblTripsAndVMT	HaulingTripNumber	0.00	795.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	20.00	0.00
tblVehicleTrips	DV_TP	30.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	43.00	0.00
tblVehicleTrips	PB_TP	10.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	37.00	100.00
tblVehicleTrips	PR_TP	60.00	100.00
tblVehicleTrips	ST_TR	4.91	5.84
tblVehicleTrips	ST_TR	2.93	10.32
tblVehicleTrips	ST_TR	122.40	792.50
tblVehicleTrips	ST_TR	8.57	16.86
tblVehicleTrips	SU_TR	4.09	6.73
tblVehicleTrips	SU_TR	3.15	15.33

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblVehicleTrips	SU_TR	142.64	1,274.78
tblVehicleTrips	SU_TR	1.42	3.86
tblWater	IndoorWaterUseRate	6,189,632.43	2,609,750.00
tblWater	IndoorWaterUseRate	5,603,246.20	1,635,200.00
tblWater	IndoorWaterUseRate	910,601.14	5,835,620.00
tblWater	IndoorWaterUseRate	18,947,561.17	7,716,100.00
tblWater	OutdoorWaterUseRate	3,902,159.58	102,200.00
tblWater	OutdoorWaterUseRate	3,532,481.30	102,200.00
tblWater	OutdoorWaterUseRate	58,123.48	102,200.00
tblWater	OutdoorWaterUseRate	3,609,059.27	102,200.00
tblWoodstoves	NumberCatalytic	4.75	0.00
tblWoodstoves	NumberCatalytic	4.30	0.00
tblWoodstoves	NumberNoncatalytic	4.75	0.00
tblWoodstoves	NumberNoncatalytic	4.30	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

**2.0 Emissions Summary**

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## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****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					
2023	6.4238	46.4850	65.7615	0.1446	4.6862	1.9311	6.6172	1.2593	1.8838	3.1431	0.0000	14,126.4873	14,126.4873	2.2495	0.7129	14,284.8049
2024	6.0217	43.9119	64.7433	0.1433	4.6862	1.6984	6.3846	1.2593	1.6555	2.9147	0.0000	14,023.2588	14,023.2588	1.3340	0.4064	14,177.7010
2025	270.5674	41.3842	63.7982	0.1419	4.6862	1.4765	6.1626	1.2593	1.4381	2.6974	0.0000	13,902.0310	13,902.0310	1.3050	0.3953	14,052.4661
Maximum	270.5674	46.4850	65.7615	0.1446	4.6862	1.9311	6.6172	1.2593	1.8838	3.1431	0.0000	14,126.4873	14,126.4873	2.2495	0.7129	14,284.8049

**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					
2023	6.4238	46.4850	65.7615	0.1446	4.6862	1.9311	6.6172	1.2593	1.8838	3.1431	0.0000	14,126.4873	14,126.4873	2.2495	0.7129	14,284.8049
2024	6.0217	43.9119	64.7433	0.1433	4.6862	1.6984	6.3846	1.2593	1.6555	2.9147	0.0000	14,023.2588	14,023.2588	1.3340	0.4064	14,177.7010
2025	270.5674	41.3842	63.7982	0.1419	4.6862	1.4765	6.1626	1.2593	1.4381	2.6974	0.0000	13,902.0310	13,902.0310	1.3050	0.3953	14,052.4661
Maximum	270.5674	46.4850	65.7615	0.1446	4.6862	1.9311	6.6172	1.2593	1.8838	3.1431	0.0000	14,126.4873	14,126.4873	2.2495	0.7129	14,284.8049

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

## 2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656
Energy	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916
Mobile	33.8150	38.2934	349.9636	0.7698	84.1443	0.5703	84.7146	22.4135	0.5294	22.9430		79,838.0595	79,838.0595	5.3913	3.3845	80,981.4294
Stationary	0.7056	1.9723	1.7993	3.3900e-003		0.1038	0.1038		0.1038	0.1038		360.9911	360.9911	0.0506		362.2564
Total	42.7242	41.8965	367.7729	0.7829	84.1443	0.8702	85.0145	22.4135	0.8293	23.2429	0.0000	82,012.8367	82,012.8367	5.5023	3.4173	83,168.7429

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656
Energy	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916
Mobile	33.8150	38.2934	349.9636	0.7698	84.1443	0.5703	84.7146	22.4135	0.5294	22.9430		79,838.0595	79,838.0595	5.3913	3.3845	80,981.4294
Stationary	0.7056	1.9723	1.7993	3.3900e-003		0.1038	0.1038		0.1038	0.1038		360.9911	360.9911	0.0506		362.2564
<b>Total</b>	<b>42.7242</b>	<b>41.8965</b>	<b>367.7729</b>	<b>0.7829</b>	<b>84.1443</b>	<b>0.8702</b>	<b>85.0145</b>	<b>22.4135</b>	<b>0.8293</b>	<b>23.2429</b>	<b>0.0000</b>	<b>82,012.8367</b>	<b>82,012.8367</b>	<b>5.5023</b>	<b>3.4173</b>	<b>83,168.7429</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## 3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/13/2023	5/27/2023	6	66	
2	Site Preparation	Site Preparation	5/28/2023	6/27/2023	6	26	
3	Grading	Grading	6/28/2023	10/31/2023	6	108	
4	Building Construction	Building Construction	11/1/2023	11/15/2025	6	640	



## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Architectural Coating	Architectural Coating	11/16/2025	11/27/2025	6	10
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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.2

Residential Indoor: 373,361; Residential Outdoor: 124,454; Non-Residential Indoor: 231,000; Non-Residential Outdoor: 77,000; Striped Parking Area: 24,904 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	12.00	78	0.48
Demolition	Excavators	1	12.00	158	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	1	12.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	1	12.00	84	0.74
Grading	Graders	0	8.00	187	0.41
Site Preparation	Graders	0	8.00	187	0.41
Demolition	Off-Highway Trucks	1	12.00	402	0.38
Site Preparation	Excavators	1	12.00	158	0.38
Site Preparation	Off-Highway Trucks	1	12.00	402	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	12.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	12.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	12.00	97	0.37
Grading	Bore/Drill Rigs	2	12.00	221	0.50
Site Preparation	Tractors/Loaders/Backhoes	2	12.00	97	0.37

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Building Construction	Welders	3	12.00	46	0.45
Grading	Cranes	2	12.00	231	0.29
Grading	Generator Sets	1	12.00	84	0.74
Grading	Plate Compactors	1	12.00	8	0.43
Grading	Excavators	1	12.00	158	0.38
Building Construction	Air Compressors	2	12.00	78	0.48
Building Construction	Skid Steer Loaders	2	12.00	65	0.37
Building Construction	Pumps	3	12.00	84	0.74
Building Construction	Excavators	1	12.00	158	0.38

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	600.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	60.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	26,400.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Building Construction	14	354.00	113.00	795.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	71.00	0.00	0.00	14.70	6.90	5.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction****Water Exposed Area**

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6848	0.0000	0.6848	0.1037	0.0000	0.1037			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933		3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>0.6848</b>	<b>0.5362</b>	<b>1.2210</b>	<b>0.1037</b>	<b>0.4933</b>	<b>0.5970</b>		<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

**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	0.0110	0.4416	0.1854	1.5100e-003	0.0399	1.9600e-003	0.0419	0.0110	1.8700e-003	0.0128		165.7102	165.7102	8.5300e-003	0.0263	173.7610
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
Worker	0.0344	0.0247	0.3331	9.4000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		95.9227	95.9227	2.5600e-003	2.4700e-003	96.7212
<b>Total</b>	<b>0.0454</b>	<b>0.4663</b>	<b>0.5184</b>	<b>2.4500e-003</b>	<b>0.1517</b>	<b>2.6300e-003</b>	<b>0.1543</b>	<b>0.0406</b>	<b>2.4900e-003</b>	<b>0.0431</b>		<b>261.6329</b>	<b>261.6329</b>	<b>0.0111</b>	<b>0.0288</b>	<b>270.4822</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6848	0.0000	0.6848	0.1037	0.0000	0.1037			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933	0.0000	3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>0.6848</b>	<b>0.5362</b>	<b>1.2210</b>	<b>0.1037</b>	<b>0.4933</b>	<b>0.5970</b>	<b>0.0000</b>	<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

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	0.0110	0.4416	0.1854	1.5100e-003	0.0399	1.9600e-003	0.0419	0.0110	1.8700e-003	0.0128		165.7102	165.7102	8.5300e-003	0.0263	173.7610
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
Worker	0.0344	0.0247	0.3331	9.4000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		95.9227	95.9227	2.5600e-003	2.4700e-003	96.7212
<b>Total</b>	<b>0.0454</b>	<b>0.4663</b>	<b>0.5184</b>	<b>2.4500e-003</b>	<b>0.1517</b>	<b>2.6300e-003</b>	<b>0.1543</b>	<b>0.0406</b>	<b>2.4900e-003</b>	<b>0.0431</b>		<b>261.6329</b>	<b>261.6329</b>	<b>0.0111</b>	<b>0.0288</b>	<b>270.4822</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0900e-003	0.0000	2.0900e-003	3.2000e-004	0.0000	3.2000e-004			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933		3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>2.0900e-003</b>	<b>0.5362</b>	<b>0.5383</b>	<b>3.2000e-004</b>	<b>0.4933</b>	<b>0.4936</b>		<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

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	2.8000e-003	0.1121	0.0471	3.8000e-004	0.0101	5.0000e-004	0.0106	2.7800e-003	4.8000e-004	3.2600e-003		42.0649	42.0649	2.1700e-003	6.6800e-003	44.1086
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
Worker	0.0344	0.0247	0.3331	9.4000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		95.9227	95.9227	2.5600e-003	2.4700e-003	96.7212
<b>Total</b>	<b>0.0372</b>	<b>0.1368</b>	<b>0.3801</b>	<b>1.3200e-003</b>	<b>0.1219</b>	<b>1.1700e-003</b>	<b>0.1231</b>	<b>0.0324</b>	<b>1.1000e-003</b>	<b>0.0335</b>		<b>137.9876</b>	<b>137.9876</b>	<b>4.7300e-003</b>	<b>9.1500e-003</b>	<b>140.8298</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.3 Site Preparation - 2023

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					2.0900e-003	0.0000	2.0900e-003	3.2000e-004	0.0000	3.2000e-004			0.0000			0.0000
Off-Road	1.4981	12.3202	16.5624	0.0371		0.5362	0.5362		0.4933	0.4933	0.0000	3,588.0706	3,588.0706	1.1605		3,617.0820
<b>Total</b>	<b>1.4981</b>	<b>12.3202</b>	<b>16.5624</b>	<b>0.0371</b>	<b>2.0900e-003</b>	<b>0.5362</b>	<b>0.5383</b>	<b>3.2000e-004</b>	<b>0.4933</b>	<b>0.4936</b>	<b>0.0000</b>	<b>3,588.0706</b>	<b>3,588.0706</b>	<b>1.1605</b>		<b>3,617.0820</b>

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	2.8000e-003	0.1121	0.0471	3.8000e-004	0.0101	5.0000e-004	0.0106	2.7800e-003	4.8000e-004	3.2600e-003		42.0649	42.0649	2.1700e-003	6.6800e-003	44.1086
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
Worker	0.0344	0.0247	0.3331	9.4000e-004	0.1118	6.7000e-004	0.1125	0.0296	6.2000e-004	0.0303		95.9227	95.9227	2.5600e-003	2.4700e-003	96.7212
<b>Total</b>	<b>0.0372</b>	<b>0.1368</b>	<b>0.3801</b>	<b>1.3200e-003</b>	<b>0.1219</b>	<b>1.1700e-003</b>	<b>0.1231</b>	<b>0.0324</b>	<b>1.1000e-003</b>	<b>0.0335</b>		<b>137.9876</b>	<b>137.9876</b>	<b>4.7300e-003</b>	<b>9.1500e-003</b>	<b>140.8298</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1927	0.0000	0.1927	0.0292	0.0000	0.0292			0.0000			0.0000
Off-Road	2.9534	28.9128	29.0211	0.0735		1.2227	1.2227		1.1415	1.1415		7,070.3245	7,070.3245	2.0142		7,120.6792
<b>Total</b>	<b>2.9534</b>	<b>28.9128</b>	<b>29.0211</b>	<b>0.0735</b>	<b>0.1927</b>	<b>1.2227</b>	<b>1.4154</b>	<b>0.0292</b>	<b>1.1415</b>	<b>1.1707</b>		<b>7,070.3245</b>	<b>7,070.3245</b>	<b>2.0142</b>		<b>7,120.6792</b>

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	0.2961	11.8753	4.9839	0.0406	1.0736	0.0527	1.1263	0.2947	0.0504	0.3451		4,455.7643	4,455.7643	0.2294	0.7072	4,672.2408
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
Worker	0.0791	0.0567	0.7661	2.1600e-003	0.2571	1.5500e-003	0.2586	0.0682	1.4300e-003	0.0696		220.6221	220.6221	5.8800e-003	5.6700e-003	222.4588
<b>Total</b>	<b>0.3752</b>	<b>11.9321</b>	<b>5.7500</b>	<b>0.0428</b>	<b>1.3307</b>	<b>0.0542</b>	<b>1.3849</b>	<b>0.3629</b>	<b>0.0518</b>	<b>0.4147</b>		<b>4,676.3865</b>	<b>4,676.3865</b>	<b>0.2353</b>	<b>0.7129</b>	<b>4,894.6996</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.4 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1927	0.0000	0.1927	0.0292	0.0000	0.0292			0.0000			0.0000
Off-Road	2.9534	28.9128	29.0211	0.0735		1.2227	1.2227		1.1415	1.1415	0.0000	7,070.3245	7,070.3245	2.0142		7,120.6792
<b>Total</b>	<b>2.9534</b>	<b>28.9128</b>	<b>29.0211</b>	<b>0.0735</b>	<b>0.1927</b>	<b>1.2227</b>	<b>1.4154</b>	<b>0.0292</b>	<b>1.1415</b>	<b>1.1707</b>	<b>0.0000</b>	<b>7,070.3245</b>	<b>7,070.3245</b>	<b>2.0142</b>		<b>7,120.6792</b>

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	0.2961	11.8753	4.9839	0.0406	1.0736	0.0527	1.1263	0.2947	0.0504	0.3451		4,455.7643	4,455.7643	0.2294	0.7072	4,672.2408
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
Worker	0.0791	0.0567	0.7661	2.1600e-003	0.2571	1.5500e-003	0.2586	0.0682	1.4300e-003	0.0696		220.6221	220.6221	5.8800e-003	5.6700e-003	222.4588
<b>Total</b>	<b>0.3752</b>	<b>11.9321</b>	<b>5.7500</b>	<b>0.0428</b>	<b>1.3307</b>	<b>0.0542</b>	<b>1.3849</b>	<b>0.3629</b>	<b>0.0518</b>	<b>0.4147</b>		<b>4,676.3865</b>	<b>4,676.3865</b>	<b>0.2353</b>	<b>0.7129</b>	<b>4,894.6996</b>



## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2023

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	5.0787	41.0105	52.2120	0.0902		1.8850	1.8850		1.8406	1.8406		8,441.1726	8,441.1726	1.1936		8,471.0116
<b>Total</b>	<b>5.0787</b>	<b>41.0105</b>	<b>52.2120</b>	<b>0.0902</b>		<b>1.8850</b>	<b>1.8850</b>		<b>1.8406</b>	<b>1.8406</b>		<b>8,441.1726</b>	<b>8,441.1726</b>	<b>1.1936</b>		<b>8,471.0116</b>

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	1.5000e-003	0.0604	0.0253	2.1000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.6000e-004	1.7500e-003		22.6428	22.6428	1.1700e-003	3.5900e-003	23.7428
Vendor	0.1256	4.5411	1.7331	0.0211	0.7238	0.0219	0.7458	0.2084	0.0210	0.2294		2,267.0094	2,267.0094	0.0755	0.3263	2,366.1195
Worker	1.2180	0.8730	11.7911	0.0332	3.9569	0.0239	3.9808	1.0494	0.0220	1.0714		3,395.6626	3,395.6626	0.0905	0.0873	3,423.9310
<b>Total</b>	<b>1.3451</b>	<b>5.4745</b>	<b>13.5495</b>	<b>0.0545</b>	<b>4.6862</b>	<b>0.0461</b>	<b>4.7322</b>	<b>1.2593</b>	<b>0.0432</b>	<b>1.3025</b>		<b>5,685.3147</b>	<b>5,685.3147</b>	<b>0.1672</b>	<b>0.4171</b>	<b>5,813.7933</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2023

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	5.0787	41.0105	52.2120	0.0902		1.8850	1.8850		1.8406	1.8406	0.0000	8,441.1726	8,441.1726	1.1936		8,471.0116
<b>Total</b>	<b>5.0787</b>	<b>41.0105</b>	<b>52.2120</b>	<b>0.0902</b>		<b>1.8850</b>	<b>1.8850</b>		<b>1.8406</b>	<b>1.8406</b>	<b>0.0000</b>	<b>8,441.1726</b>	<b>8,441.1726</b>	<b>1.1936</b>		<b>8,471.0116</b>

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	1.5000e-003	0.0604	0.0253	2.1000e-004	5.4600e-003	2.7000e-004	5.7200e-003	1.5000e-003	2.6000e-004	1.7500e-003		22.6428	22.6428	1.1700e-003	3.5900e-003	23.7428
Vendor	0.1256	4.5411	1.7331	0.0211	0.7238	0.0219	0.7458	0.2084	0.0210	0.2294		2,267.0094	2,267.0094	0.0755	0.3263	2,366.1195
Worker	1.2180	0.8730	11.7911	0.0332	3.9569	0.0239	3.9808	1.0494	0.0220	1.0714		3,395.6626	3,395.6626	0.0905	0.0873	3,423.9310
<b>Total</b>	<b>1.3451</b>	<b>5.4745</b>	<b>13.5495</b>	<b>0.0545</b>	<b>4.6862</b>	<b>0.0461</b>	<b>4.7322</b>	<b>1.2593</b>	<b>0.0432</b>	<b>1.3025</b>		<b>5,685.3147</b>	<b>5,685.3147</b>	<b>0.1672</b>	<b>0.4171</b>	<b>5,813.7933</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2024

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	4.7598	38.5217	52.0362	0.0902		1.6532	1.6532		1.6130	1.6130		8,441.9229	8,441.9229	1.1751		8,471.2992
<b>Total</b>	<b>4.7598</b>	<b>38.5217</b>	<b>52.0362</b>	<b>0.0902</b>		<b>1.6532</b>	<b>1.6532</b>		<b>1.6130</b>	<b>1.6130</b>		<b>8,441.9229</b>	<b>8,441.9229</b>	<b>1.1751</b>		<b>8,471.2992</b>

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	1.5000e-003	0.0604	0.0255	2.0000e-004	5.4600e-003	2.7000e-004	5.7300e-003	1.5000e-003	2.6000e-004	1.7600e-003		22.3227	22.3227	1.1800e-003	3.5400e-003	23.4083
Vendor	0.1214	4.5504	1.6967	0.0207	0.7238	0.0221	0.7459	0.2084	0.0211	0.2295		2,233.0420	2,233.0420	0.0758	0.3217	2,330.7971
Worker	1.1390	0.7794	10.9849	0.0322	3.9569	0.0229	3.9798	1.0494	0.0211	1.0705		3,325.9711	3,325.9711	0.0820	0.0811	3,352.1965
<b>Total</b>	<b>1.2619</b>	<b>5.3902</b>	<b>12.7071</b>	<b>0.0532</b>	<b>4.6862</b>	<b>0.0453</b>	<b>4.7314</b>	<b>1.2593</b>	<b>0.0425</b>	<b>1.3018</b>		<b>5,581.3358</b>	<b>5,581.3358</b>	<b>0.1589</b>	<b>0.4064</b>	<b>5,706.4018</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2024

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	4.7598	38.5217	52.0362	0.0902		1.6532	1.6532		1.6130	1.6130	0.0000	8,441.922 9	8,441.922 9	1.1751		8,471.299 2
<b>Total</b>	<b>4.7598</b>	<b>38.5217</b>	<b>52.0362</b>	<b>0.0902</b>		<b>1.6532</b>	<b>1.6532</b>		<b>1.6130</b>	<b>1.6130</b>	<b>0.0000</b>	<b>8,441.922 9</b>	<b>8,441.922 9</b>	<b>1.1751</b>		<b>8,471.299 2</b>

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	1.5000e-003	0.0604	0.0255	2.0000e-004	5.4600e-003	2.7000e-004	5.7300e-003	1.5000e-003	2.6000e-004	1.7600e-003		22.3227	22.3227	1.1800e-003	3.5400e-003	23.4083
Vendor	0.1214	4.5504	1.6967	0.0207	0.7238	0.0221	0.7459	0.2084	0.0211	0.2295		2,233.042 0	2,233.042 0	0.0758	0.3217	2,330.797 1
Worker	1.1390	0.7794	10.9849	0.0322	3.9569	0.0229	3.9798	1.0494	0.0211	1.0705		3,325.971 1	3,325.971 1	0.0820	0.0811	3,352.196 5
<b>Total</b>	<b>1.2619</b>	<b>5.3902</b>	<b>12.7071</b>	<b>0.0532</b>	<b>4.6862</b>	<b>0.0453</b>	<b>4.7314</b>	<b>1.2593</b>	<b>0.0425</b>	<b>1.3018</b>		<b>5,581.335 8</b>	<b>5,581.335 8</b>	<b>0.1589</b>	<b>0.4064</b>	<b>5,706.401 8</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2025

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	4.4562	36.0949	51.8611	0.0902		1.4322	1.4322		1.3966	1.3966		8,442.2185	8,442.2185	1.1534		8,471.0544
<b>Total</b>	<b>4.4562</b>	<b>36.0949</b>	<b>51.8611</b>	<b>0.0902</b>		<b>1.4322</b>	<b>1.4322</b>		<b>1.3966</b>	<b>1.3966</b>		<b>8,442.2185</b>	<b>8,442.2185</b>	<b>1.1534</b>		<b>8,471.0544</b>

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	1.4900e-003	0.0600	0.0256	2.0000e-004	5.4600e-003	2.7000e-004	5.7300e-003	1.5000e-003	2.6000e-004	1.7600e-003		21.9276	21.9276	1.1900e-003	3.4800e-003	22.9951
Vendor	0.1178	4.5292	1.6660	0.0203	0.7238	0.0221	0.7460	0.2084	0.0212	0.2296		2,192.9061	2,192.9061	0.0763	0.3161	2,289.0132
Worker	1.0688	0.7001	10.2455	0.0312	3.9569	0.0219	3.9787	1.0494	0.0201	1.0695		3,244.9788	3,244.9788	0.0740	0.0758	3,269.4033
<b>Total</b>	<b>1.1881</b>	<b>5.2894</b>	<b>11.9371</b>	<b>0.0517</b>	<b>4.6862</b>	<b>0.0443</b>	<b>4.7304</b>	<b>1.2593</b>	<b>0.0416</b>	<b>1.3009</b>		<b>5,459.8124</b>	<b>5,459.8124</b>	<b>0.1515</b>	<b>0.3953</b>	<b>5,581.4116</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.5 Building Construction - 2025

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	4.4562	36.0949	51.8611	0.0902		1.4322	1.4322		1.3966	1.3966	0.0000	8,442.2185	8,442.2185	1.1534		8,471.0544
<b>Total</b>	<b>4.4562</b>	<b>36.0949</b>	<b>51.8611</b>	<b>0.0902</b>		<b>1.4322</b>	<b>1.4322</b>		<b>1.3966</b>	<b>1.3966</b>	<b>0.0000</b>	<b>8,442.2185</b>	<b>8,442.2185</b>	<b>1.1534</b>		<b>8,471.0544</b>

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	1.4900e-003	0.0600	0.0256	2.0000e-004	5.4600e-003	2.7000e-004	5.7300e-003	1.5000e-003	2.6000e-004	1.7600e-003		21.9276	21.9276	1.1900e-003	3.4800e-003	22.9951
Vendor	0.1178	4.5292	1.6660	0.0203	0.7238	0.0221	0.7460	0.2084	0.0212	0.2296		2,192.9061	2,192.9061	0.0763	0.3161	2,289.0132
Worker	1.0688	0.7001	10.2455	0.0312	3.9569	0.0219	3.9787	1.0494	0.0201	1.0695		3,244.9788	3,244.9788	0.0740	0.0758	3,269.4033
<b>Total</b>	<b>1.1881</b>	<b>5.2894</b>	<b>11.9371</b>	<b>0.0517</b>	<b>4.6862</b>	<b>0.0443</b>	<b>4.7304</b>	<b>1.2593</b>	<b>0.0416</b>	<b>1.3009</b>		<b>5,459.8124</b>	<b>5,459.8124</b>	<b>0.1515</b>	<b>0.3953</b>	<b>5,581.4116</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2025****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	269.6696					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6834	4.5820	7.2365	0.0119		0.2060	0.2060		0.2060	0.2060		1,125.792 2	1,125.792 2	0.0614		1,127.327 5
<b>Total</b>	<b>270.3531</b>	<b>4.5820</b>	<b>7.2365</b>	<b>0.0119</b>		<b>0.2060</b>	<b>0.2060</b>		<b>0.2060</b>	<b>0.2060</b>		<b>1,125.792 2</b>	<b>1,125.792 2</b>	<b>0.0614</b>		<b>1,127.327 5</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Worker	0.2144	0.1404	2.0549	6.2500e-003	0.7936	4.3800e-003	0.7980	0.2105	4.0300e-003	0.2145		650.8291	650.8291	0.0148	0.0152	655.7278
<b>Total</b>	<b>0.2144</b>	<b>0.1404</b>	<b>2.0549</b>	<b>6.2500e-003</b>	<b>0.7936</b>	<b>4.3800e-003</b>	<b>0.7980</b>	<b>0.2105</b>	<b>4.0300e-003</b>	<b>0.2145</b>		<b>650.8291</b>	<b>650.8291</b>	<b>0.0148</b>	<b>0.0152</b>	<b>655.7278</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 3.6 Architectural Coating - 2025

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	269.6696					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.6834	4.5820	7.2365	0.0119		0.2060	0.2060		0.2060	0.2060	0.0000	1,125.792 2	1,125.792 2	0.0614		1,127.327 5
<b>Total</b>	<b>270.3531</b>	<b>4.5820</b>	<b>7.2365</b>	<b>0.0119</b>		<b>0.2060</b>	<b>0.2060</b>		<b>0.2060</b>	<b>0.2060</b>	<b>0.0000</b>	<b>1,125.792 2</b>	<b>1,125.792 2</b>	<b>0.0614</b>		<b>1,127.327 5</b>

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
Worker	0.2144	0.1404	2.0549	6.2500e-003	0.7936	4.3800e-003	0.7980	0.2105	4.0300e-003	0.2145		650.8291	650.8291	0.0148	0.0152	655.7278
<b>Total</b>	<b>0.2144</b>	<b>0.1404</b>	<b>2.0549</b>	<b>6.2500e-003</b>	<b>0.7936</b>	<b>4.3800e-003</b>	<b>0.7980</b>	<b>0.2105</b>	<b>4.0300e-003</b>	<b>0.2145</b>		<b>650.8291</b>	<b>650.8291</b>	<b>0.0148</b>	<b>0.0152</b>	<b>655.7278</b>



## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 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	33.8150	38.2934	349.9636	0.7698	84.1443	0.5703	84.7146	22.4135	0.5294	22.9430		79,838.05 95	79,838.05 95	5.3913	3.3845	80,981.42 94
Unmitigated	33.8150	38.2934	349.9636	0.7698	84.1443	0.5703	84.7146	22.4135	0.5294	22.9430		79,838.05 95	79,838.05 95	5.3913	3.3845	80,981.42 94

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	516.80	554.80	639.35	2,077,487	2,077,487
Congregate Care (Assisted Living)	223.60	887.52	1318.38	1,827,709	1,827,709
Enclosed Parking with Elevator	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	336.54	2,377.50	3824.34	3,612,885	3,612,885
Medical Office Building	5,254.80	2,545.86	582.86	16,118,406	16,118,406
Total	6,331.74	6,365.68	6,364.93	23,636,488	23,636,488

## 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 Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0
Congregate Care (Assisted)	14.70	5.90	8.70	40.20	19.20	40.60	100	0	0

## Affinity-Proposed - Los Angeles-South Coast County, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

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
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
High Turnover (Sit Down	16.60	8.40	6.90	8.50	72.50	19.00	100	0	0
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	100	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Congregate Care (Assisted Living)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Enclosed Parking with Elevator	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
High Turnover (Sit Down Restaurant)	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352
Medical Office Building	0.542464	0.063735	0.188241	0.126899	0.023249	0.006239	0.010717	0.008079	0.000923	0.000604	0.024795	0.000702	0.003352

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Natural Gas Mitigated	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916
Natural Gas Unmitigated	0.1638	1.4583	1.0256	8.9300e-003		0.1132	0.1132		0.1132	0.1132		1,786.7737	1,786.7737	0.0343	0.0328	1,797.3916

## 5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2609.53	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0039	307.0039	5.8800e-003	5.6300e-003	308.8282
Congregate Care (Assisted Living)	2609.52	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0027	307.0027	5.8800e-003	5.6300e-003	308.8270
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	5703.29	0.0615	0.5592	0.4697	3.3500e-003		0.0425	0.0425		0.0425	0.0425		670.9750	670.9750	0.0129	0.0123	674.9623
Medical Office Building	4265.23	0.0460	0.4182	0.3513	2.5100e-003		0.0318	0.0318		0.0318	0.0318		501.7921	501.7921	9.6200e-003	9.2000e-003	504.7740
<b>Total</b>		<b>0.1638</b>	<b>1.4583</b>	<b>1.0256</b>	<b>8.9400e-003</b>		<b>0.1132</b>	<b>0.1132</b>		<b>0.1132</b>	<b>0.1132</b>		<b>1,786.7737</b>	<b>1,786.7737</b>	<b>0.0342</b>	<b>0.0328</b>	<b>1,797.3916</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.60953	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0039	307.0039	5.8800e-003	5.6300e-003	308.8282
Congregate Care (Assisted Living)	2.60952	0.0281	0.2405	0.1023	1.5400e-003		0.0194	0.0194		0.0194	0.0194		307.0027	307.0027	5.8800e-003	5.6300e-003	308.8270
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	5.70329	0.0615	0.5592	0.4697	3.3500e-003		0.0425	0.0425		0.0425	0.0425		670.9750	670.9750	0.0129	0.0123	674.9623
Medical Office Building	4.26523	0.0460	0.4182	0.3513	2.5100e-003		0.0318	0.0318		0.0318	0.0318		501.7921	501.7921	9.6200e-003	9.2000e-003	504.7740
<b>Total</b>		<b>0.1638</b>	<b>1.4583</b>	<b>1.0256</b>	<b>8.9400e-003</b>		<b>0.1132</b>	<b>0.1132</b>		<b>0.1132</b>	<b>0.1132</b>		<b>1,786.7737</b>	<b>1,786.7737</b>	<b>0.0342</b>	<b>0.0328</b>	<b>1,797.3916</b>

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656
Unmitigated	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656

## 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	0.7388					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8469					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	0.4542	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829		27.0125	27.0125	0.0261		27.6656
<b>Total</b>	<b>8.0398</b>	<b>0.1725</b>	<b>14.9845</b>	<b>7.9000e-004</b>		<b>0.0829</b>	<b>0.0829</b>		<b>0.0829</b>	<b>0.0829</b>	<b>0.0000</b>	<b>27.0125</b>	<b>27.0125</b>	<b>0.0261</b>	<b>0.0000</b>	<b>27.6656</b>

## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 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	0.7388					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.8469					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	0.4542	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829		27.0125	27.0125	0.0261		27.6656
Total	8.0398	0.1725	14.9845	7.9000e-004		0.0829	0.0829		0.0829	0.0829	0.0000	27.0125	27.0125	0.0261	0.0000	27.6656

## 7.0 Water Detail

## 7.1 Mitigation Measures Water

## 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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## Affinity-Proposed - Los Angeles-South Coast County, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	2	1	52	215	0.73	Diesel

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**10.1 Stationary Sources****Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (175 - 300 HP)	0.7056	1.9723	1.7993	3.3900e-003		0.1038	0.1038		0.1038	0.1038		360.9911	360.9911	0.0506		362.2564
<b>Total</b>	<b>0.7056</b>	<b>1.9723</b>	<b>1.7993</b>	<b>3.3900e-003</b>		<b>0.1038</b>	<b>0.1038</b>		<b>0.1038</b>	<b>0.1038</b>		<b>360.9911</b>	<b>360.9911</b>	<b>0.0506</b>		<b>362.2564</b>

**11.0 Vegetation**



Technical Consultation, Data Analysis and  
Litigation Support for the Environment

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**Matthew F. Hagemann, P.G., C.Hg., QSD, QSP**

**Geologic and Hydrogeologic Characterization  
Investigation and Remediation Strategies  
Litigation Support and Testifying Expert  
Industrial Stormwater Compliance  
CEQA Review**

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.

B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certifications:**

California Professional Geologist

California Certified Hydrogeologist

Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014, 2017;
- Senior Environmental Analyst, Komex H<sub>2</sub>O Science, Inc. (2000 -- 2003);



- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

**Senior Regulatory and Litigation Support Analyst:**

With SWAPE, Matt’s responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt’s duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

#### **Executive Director:**

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

#### **Hydrogeology:**

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

### **Policy:**

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, *Oxygenates in Water: Critical Information and Research Needs*.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.

- Established national protocol for the peer review of scientific documents.

### **Geology:**

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

### **Teaching:**

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

### **Invited Testimony, Reports, Papers and Presentations:**

**Hagemann, M.F.**, 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

**Hagemann, M.F.**, 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

**Hagemann, M.F.**, 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Colorado.

**Hagemann, M.F.**, 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

**Hagemann, M.F.**, 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

**Hagemann, M.F.**, 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

**Hagemann, M.F.**, 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

**Hagemann, M.F.**, 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

**Hagemann, M.F.**, 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

**Hagemann, M.F.**, 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

**Hagemann, M.F.**, 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

**Hagemann, M.F.**, 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

**Hagemann, M.F.**, 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F.**, 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F.**, 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

**Hagemann, M.F.**, 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F.**, 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

**Hagemann, M.F.**, 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

**Hagemann, M.F.**, 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

**Hagemann, M.F.**, 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

**Hagemann, M.F.**, and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

**Hagemann, M.F.**, 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

**Hagemann, M.F.**, 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

**Hagemann, M.F.**, and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

**Hagemann, M.F.**, Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

**Hagemann, M. F.**, Fukunaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

**Hagemann, M.F.**, 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

**Hagemann, M.F.** and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

**Hagemann, M.F.**, 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

**Hagemann, M.F.**, 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

**Other Experience:**

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.



Technical Consultation, Data Analysis and  
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#### SOIL WATER AIR PROTECTION ENTERPRISE

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## ***Paul Rosenfeld, Ph.D.***

**Chemical Fate and Transport & Air Dispersion Modeling**

*Principal Environmental Chemist*

**Risk Assessment & Remediation Specialist**

### **Education**

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

### **Professional Experience**

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.



## **Professional History:**

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner  
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)  
UCLA School of Public Health; 2003 to 2006; Adjunct Professor  
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator  
UCLA Institute of the Environment, 2001-2002; Research Associate  
Komex H<sub>2</sub>O Science, 2001 to 2003; Senior Remediation Scientist  
National Groundwater Association, 2002-2004; Lecturer  
San Diego State University, 1999-2001; Adjunct Professor  
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager  
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager  
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor  
King County, Seattle, 1996 – 1999; Scientist  
James River Corp., Washington, 1995-96; Scientist  
Big Creek Lumber, Davenport, California, 1995; Scientist  
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist  
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

## **Publications:**

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health*. 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P.**, (2015) Modeling the Effect of Refinery Emission On Residential Property Value. *Journal of Real Estate Research*. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.**, Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermid and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

**Rosenfeld, P.E.** & Feng, L. (2011). *The Risks of Hazardous Waste*. Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries*. Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P.** (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution*, 123 (17), 319-327.

Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

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**Rosenfeld, P. E.**, Grey, M. A., Sellev, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

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**Rosenfeld, P. E.** (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

**Rosenfeld, P. E.** (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

## **Presentations:**

**Rosenfeld, P.E.**, "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

**Rosenfeld, P.E.**, Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society*. Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

**Rosenfeld, P.E.** (April 19-23, 2009). Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

**Rosenfeld, P.E.** (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States” Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P.** (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

**Rosenfeld, P. E.** (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23<sup>rd</sup> Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23<sup>rd</sup> Annual International*

*Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld, P. E.** (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The 23<sup>rd</sup> *Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

**Rosenfeld P. E.** (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

**Rosenfeld P. E.** (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting*. Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition*. Lecture conducted from Boston Massachusetts.

**Paul Rosenfeld Ph.D.** (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference*. Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

**Paul Rosenfeld Ph.D.** (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

**Paul Rosenfeld Ph.D.** (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel in Irvine, California.

**Paul Rosenfeld Ph.D.** (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference*. Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

**Paul Rosenfeld Ph.D.** (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

**Paul Rosenfeld Ph.D.** (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld Ph.D.** (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

**Paul Rosenfeld, Ph.D.** (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

**Paul Rosenfeld, Ph.D.** (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

**Rosenfeld, P. E.**, Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

**Paul Rosenfeld, Ph.D.** and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants..* Lecture conducted from Hyatt Regency Phoenix Arizona.

**Paul Rosenfeld, Ph.D.** (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

**Paul Rosenfeld, Ph.D.** (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E.** and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

**Rosenfeld, P.E.** and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

**Rosenfeld, P.E.** and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conference*. Lecture conducted from Indianapolis, Maryland.

**Rosenfeld. P.E.** (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation*. Lecture conducted from Anaheim California.

**Rosenfeld. P.E.** (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest*. Lecture conducted from Ocean Shores, California.

**Rosenfeld, P.E.** (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

**Rosenfeld, P.E.**, C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.**, and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

**Rosenfeld, P.E.**, C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell*. Lecture conducted from Seattle Washington.

**Rosenfeld, P.E.,** C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest*. Lecture conducted from Lake Chelan, Washington.

**Rosenfeld, P.E.,** C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

**Rosenfeld, P.E.,** C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

## **Teaching Experience:**

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

## **Academic Grants Awarded:**

California Integrated Waste Management Board. \$41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: \$10,000 grant awarded to San Diego State University. Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. \$100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. \$20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: \$10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: \$15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. \$500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

## **Deposition and/or Trial Testimony:**

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois  
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants  
Case No.: No. 0i9-L-2295  
Rosenfeld Deposition, 5-14-2021  
Trial, October 8-4-2021

In the Circuit Court of Cook County Illinois  
Joseph Rafferty, Plaintiff vs. Consolidated Rail Corporation and National Railroad Passenger Corporation  
d/b/a AMTRAK,  
Case No.: No. 18-L-6845  
Rosenfeld Deposition, 6-28-2021

In the United States District Court For the Northern District of Illinois  
Theresa Romcoe, Plaintiff vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA  
Rail, Defendants  
Case No.: No. 17-cv-8517  
Rosenfeld Deposition, 5-25-2021

In the Superior Court of the State of Arizona In and For the Cuntly of Maricopa  
Mary Tryon et al., Plaintiff vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.  
Case Number CV20127-094749  
Rosenfeld Deposition: 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division  
Robinson, Jeremy et al *Plaintiffs*, vs. CNA Insurance Company et al.  
Case Number 1:17-cv-000508  
Rosenfeld Deposition: 3-25-2021

In the Superior Court of the State of California, County of San Bernardino  
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.  
Case No. 1720288  
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse  
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.  
Case No. 18STCV01162  
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri  
Karen Cornwell, *Plaintiff*, vs. Marathon Petroleum, LP, *Defendant*.  
Case No.: 1716-CV10006  
Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey  
Duarte et al, *Plaintiffs*, vs. United States Metals Refining Company et. al. *Defendant*.  
Case No.: 2:17-cv-01624-ES-SCM  
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division  
M/T Carla Maersk, *Plaintiffs*, vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS “Conti Perdido”  
*Defendant*.  
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237  
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica  
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants  
Case No.: No. BC615636  
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica  
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants  
Case No.: No. BC646857  
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado  
Bells et al. Plaintiff vs. The 3M Company et al., Defendants  
Case No.: 1:16-cv-02531-RBJ  
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112<sup>th</sup> Judicial District  
Phillip Bales et al., Plaintiff vs. Dow Agrosiences, LLC, et al., Defendants  
Cause No.: 1923  
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa  
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants  
Cause No C12-01481  
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois  
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants  
Case No.: No. 0i9-L-2295  
Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi  
Guy Manuel vs. The BP Exploration et al., Defendants  
Case: No 1:19-cv-00315-RHW  
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles  
Warrn Gilbert and Penny Gilber, Plaintiff vs. BMW of North America LLC  
Case No.: LC102019 (c/w BC582154)  
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division  
Brenda J. Cooper, et al., *Plaintiffs*, vs. Meritor Inc., et al., *Defendants*  
Case Number: 4:16-cv-52-DMB-JVM  
Rosenfeld Deposition: July 2017



In The Superior Court of the State of Washington, County of Snohomish  
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants  
Case No.: No. 13-2-03987-5  
Rosenfeld Deposition, February 2017  
Trial, March 2017

In The Superior Court of the State of California, County of Alameda  
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants  
Case No.: RG14711115  
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County  
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants  
Case No.: LALA002187  
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia  
Robert Andrews, et al. v. Antero, et al.  
Civil Action NO. 14-C-30000  
Rosenfeld Deposition, June 2015

In The Iowa District Court For Muscatine County  
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant  
Case No 4980  
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17<sup>th</sup> Judicial Circuit, in and For Broward County, Florida  
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.  
Case Number CACE07030358 (26)  
Rosenfeld Deposition: December 2014

In the County Court of Dallas County Texas  
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant*.  
Case Number cc-11-01650-E  
Rosenfeld Deposition: March and September 2013  
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio  
John Michael Abicht, et al., *Plaintiffs*, vs. Republic Services, Inc., et al., *Defendants*  
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)  
Rosenfeld Deposition: October 2012

In the United States District Court for the Middle District of Alabama, Northern Division  
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.  
Civil Action Number 2:09-cv-232-WHA-TFM  
Rosenfeld Deposition: July 2010, June 2011

In the Circuit Court of Jefferson County Alabama  
Jaeanette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*  
Civil Action No. CV 2008-2076  
Rosenfeld Deposition: September 2010

In the United States District Court, Western District Lafayette Division  
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.  
Case Number 2:07CV1052  
Rosenfeld Deposition: July 2009

# EXHIBIT B



## INDOOR ENVIRONMENTAL ENGINEERING



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Date: June 7, 2022

To: Amalia Bowley Fuentes  
Lozeau | Drury LLP  
1939 Harrison Street, Suite 150  
Oakland, California 94612

From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: Affinity Project, Pasadena, CA  
(IEE File Reference: P-4588)

Pages: 19

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### Indoor Air Quality Impacts

Indoor air quality (IAQ) directly impacts the comfort and health of building occupants, and the achievement of acceptable IAQ in newly constructed and renovated buildings is a well-recognized design objective. For example, IAQ is addressed by major high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014). Indoor air quality in homes is particularly important because occupants, on average, spend approximately ninety percent of their time indoors with the majority of this time spent at home (EPA, 2011). Some segments of the population that are most susceptible to the effects of poor IAQ, such as the very young and the elderly, occupy their homes almost continuously. Additionally, an increasing number of adults are working from home at least some of the time during the workweek. Indoor air quality also is a serious concern for workers in hotels, offices and other business establishments.

The concentrations of many air pollutants often are elevated in homes and other buildings relative to outdoor air because many of the materials and products used indoors contain

and release a variety of pollutants to air (Hodgson et al., 2002; Offermann and Hodgson, 2011). With respect to indoor air contaminants for which inhalation is the primary route of exposure, the critical design and construction parameters are the provision of adequate ventilation and the reduction of indoor sources of the contaminants.

**Indoor Formaldehyde Concentrations Impact.** In the California New Home Study (CNHS) of 108 new homes in California (Offermann, 2009), 25 air contaminants were measured, and formaldehyde was identified as the indoor air contaminant with the highest cancer risk as determined by the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), No Significant Risk Levels (NSRL) for carcinogens. The NSRL is the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000 (i.e., ten in one million cancer risk) and for formaldehyde is 40 µg/day. The NSRL concentration of formaldehyde that represents a daily dose of 40 µg is 2 µg/m<sup>3</sup>, assuming a continuous 24-hour exposure, a total daily inhaled air volume of 20 m<sup>3</sup>, and 100% absorption by the respiratory system. All of the CNHS homes exceeded this NSRL concentration of 2 µg/m<sup>3</sup>. The median indoor formaldehyde concentration was 36 µg/m<sup>3</sup>, and ranged from 4.8 to 136 µg/m<sup>3</sup>, which corresponds to a median exceedance of the 2 µg/m<sup>3</sup> NSRL concentration of 18 and a range of 2.3 to 68.

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Therefore, the cancer risk of a resident living in a California home with the median indoor formaldehyde concentration of 36 µg/m<sup>3</sup>, is 180 per million as a result of formaldehyde alone. The CEQA significance threshold for airborne cancer risk is 10 per million, as established by the South Coast Air Quality Management District (SCAQMD, 2015).

Besides being a human carcinogen, formaldehyde is also a potent eye and respiratory irritant. In the CNHS, many homes exceeded the non-cancer reference exposure levels (RELs) prescribed by California Office of Environmental Health Hazard Assessment (OEHHA, 2017b). The percentage of homes exceeding the RELs ranged from 98% for the Chronic REL of 9 µg/m<sup>3</sup> to 28% for the Acute REL of 55 µg/m<sup>3</sup>.

The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and

particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.

In January 2009, the California Air Resources Board (CARB) adopted an airborne toxics control measure (ATCM) to reduce formaldehyde emissions from composite wood products, including hardwood plywood, particleboard, medium density fiberboard, and also furniture and other finished products made with these wood products (California Air Resources Board 2009). While this formaldehyde ATCM has resulted in reduced emissions from composite wood products sold in California, they do not preclude that homes built with composite wood products meeting the CARB ATCM will have indoor formaldehyde concentrations below cancer and non-cancer exposure guidelines.

A follow up study to the California New Home Study (CNHS) was conducted in 2016-2018 (Singer et. al., 2019), and found that the median indoor formaldehyde in new homes built after 2009 with CARB Phase 2 Formaldehyde ATCM materials had lower indoor formaldehyde concentrations, with a median indoor concentrations of  $22.4 \mu\text{g}/\text{m}^3$  (18.2 ppb) as compared to a median of  $36 \mu\text{g}/\text{m}^3$  found in the 2007 CNHS. Unlike in the CNHS study where formaldehyde concentrations were measured with pumped DNPH samplers, the formaldehyde concentrations in the HENGH study were measured with passive samplers, which were estimated to under-measure the true indoor formaldehyde concentrations by approximately 7.5%. Applying this correction to the HENGH indoor formaldehyde concentrations results in a median indoor concentration of  $24.1 \mu\text{g}/\text{m}^3$ , which is 33% lower than the  $36 \mu\text{g}/\text{m}^3$  found in the 2007 CNHS.

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Thus, while new homes built after the 2009 CARB formaldehyde ATCM have a 33% lower median indoor formaldehyde concentration and cancer risk, the median lifetime cancer risk is still 120 per million for homes built with CARB compliant composite wood products. This median lifetime cancer risk is more than 12 times the OEHHHA 10 in a million cancer risk threshold (OEHHHA, 2017a).

With respect to the Affinity Project, Pasadena, CA the buildings consist of commercial medical office spaces and assisted living residential spaces.

The assisted living residential occupants will potentially have continuous exposure (e.g. 24 hours per day, 52 weeks per year). These exposures are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in residential construction.

Because these residences will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor residential formaldehyde concentrations are likely similar to those concentrations observed in residences built with CARB Phase 2 Formaldehyde ATCM materials, which is a median of  $24.1 \mu\text{g}/\text{m}^3$  (Singer et. al., 2020)

Assuming that the residential occupants inhale  $20 \text{ m}^3$  of air per day, the formaldehyde daily dose is  $482 \mu\text{g}/\text{day}$  for continuous exposure in the assisted living residences. If we assume that the residents live in the assisted living residences for 10 years, even if the residents were to have zero exposure prior to moving into the assisted living residences, the 70 year lifetime exposure would be  $68.9 \mu\text{g}/\text{day}$ , which represents a cancer risk of 17 per million, which is more than 1.7 times the CEQA cancer risk of 10 per million.

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The employees of the commercial spaces are expected to experience significant indoor exposures (e.g., 40 hours per week, 50 weeks per year). These exposures for employees are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in offices, warehouses, residences and hotels.

Because the commercial spaces will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor formaldehyde concentrations are likely similar to those concentrations observed in residences built with CARB Phase 2 Formaldehyde ATCM materials, which is a median of  $24.1 \mu\text{g}/\text{m}^3$  (Singer et. al., 2020)

Assuming that the employees of commercial spaces work 8 hours per day and inhale 20

m<sup>3</sup> of air per day, the formaldehyde dose per work-day at the offices is 161 µg/day.

Assuming that these employees work 5 days per week and 50 weeks per year for 45 years (start at age 20 and retire at age 65) the average 70-year lifetime formaldehyde daily dose is 70.9 µg/day.

This is 1.77 times the NSRL (OEHHA, 2017a) of 40 µg/day and represents a cancer risk of 17.7 per million, which exceeds the CEQA cancer risk of 10 per million. This impact should be analyzed in an environmental impact report (“EIR”), and the agency should impose all feasible mitigation measures to reduce this impact. Several feasible mitigation measures are discussed below and these and other measures should be analyzed in an EIR.

Appendix A, Indoor Formaldehyde Concentrations and the CARB Formaldehyde ATCM, provides analyses that show utilization of CARB Phase 2 Formaldehyde ATCM materials will not ensure acceptable cancer risks with respect to formaldehyde emissions from composite wood products.

Even composite wood products manufactured with CARB certified ultra low emitting formaldehyde (ULEF) resins do not insure that the indoor air will have concentrations of formaldehyde that meet the OEHHA cancer risks that substantially exceed 10 per million. The permissible emission rates for ULEF composite wood products are only 11-15% lower than the CARB Phase 2 emission rates. Only use of composite wood products made with no-added formaldehyde resins (NAF), such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

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The following describes a method that should be used, prior to construction in the environmental review under CEQA, for determining whether the indoor concentrations resulting from the formaldehyde emissions of specific building materials/furnishings selected exceed cancer and non-cancer guidelines. Such a design analyses can be used to identify those materials/furnishings prior to the completion of the City’s CEQA review

and project approval, that have formaldehyde emission rates that contribute to indoor concentrations that exceed cancer and non-cancer guidelines, so that alternative lower emitting materials/furnishings may be selected and/or higher minimum outdoor air ventilation rates can be increased to achieve acceptable indoor concentrations and incorporated as mitigation measures for this project.

#### Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment

This formaldehyde emissions assessment should be used in the environmental review under CEQA to assess the indoor formaldehyde concentrations from the proposed loading of building materials/furnishings, the area-specific formaldehyde emission rate data for building materials/furnishings, and the design minimum outdoor air ventilation rates. This assessment allows the applicant (and the City) to determine, before the conclusion of the environmental review process and the building materials/furnishings are specified, purchased, and installed, if the total chemical emissions will exceed cancer and non-cancer guidelines, and if so, allow for changes in the selection of specific material/furnishings and/or the design minimum outdoor air ventilations rates such that cancer and non-cancer guidelines are not exceeded.

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1.) Define Indoor Air Quality Zones. Divide the building into separate indoor air quality zones, (IAQ Zones). IAQ Zones are defined as areas of well-mixed air. Thus, each ventilation system with recirculating air is considered a single zone, and each room or group of rooms where air is not recirculated (e.g. 100% outdoor air) is considered a separate zone. For IAQ Zones with the same construction material/furnishings and design minimum outdoor air ventilation rates. (e.g. hotel rooms, apartments, condominiums, etc.) the formaldehyde emission rates need only be assessed for a single IAQ Zone of that type.

2.) Calculate Material/Furnishing Loading. For each IAQ Zone, determine the building material and furnishing loadings (e.g., m<sup>2</sup> of material/m<sup>2</sup> floor area, units of furnishings/m<sup>2</sup> floor area) from an inventory of all potential indoor formaldehyde sources, including flooring, ceiling tiles, furnishings, finishes, insulation, sealants,



adhesives, and any products constructed with composite wood products containing urea-formaldehyde resins (e.g., plywood, medium density fiberboard, particleboard).

3.) Calculate the Formaldehyde Emission Rate. For each building material, calculate the formaldehyde emission rate ( $\mu\text{g/h}$ ) from the product of the area-specific formaldehyde emission rate ( $\mu\text{g/m}^2\text{-h}$ ) and the area ( $\text{m}^2$ ) of material in the IAQ Zone, and from each furnishing (e.g. chairs, desks, etc.) from the unit-specific formaldehyde emission rate ( $\mu\text{g/unit-h}$ ) and the number of units in the IAQ Zone.

NOTE: As a result of the high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014), most manufacturers of building materials furnishings sold in the United States conduct chemical emission rate tests using the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers,” (CDPH, 2017), or other equivalent chemical emission rate testing methods. Most manufacturers of building furnishings sold in the United States conduct chemical emission rate tests using ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions (BIFMA, 2018), or other equivalent chemical emission rate testing methods.

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CDPH, BIFMA, and other chemical emission rate testing programs, typically certify that a material or furnishing does not create indoor chemical concentrations in excess of the maximum concentrations permitted by their certification. For instance, the CDPH emission rate testing requires that the measured emission rates when input into an office, school, or residential model do not exceed one-half of the OEHHA Chronic Exposure Guidelines (OEHHA, 2017b) for the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017). These certifications themselves do not provide the actual area-specific formaldehyde emission rate (i.e.,  $\mu\text{g/m}^2\text{-h}$ ) of the product, but rather provide data that the formaldehyde emission rates do not exceed the maximum rate allowed for the certification. Thus, for example, the data for a certification of a specific type of flooring may be used to calculate that the area-specific emission rate of formaldehyde is less than  $31 \mu\text{g/m}^2\text{-h}$ , but not the actual measured specific emission rate, which may be 3, 18, or  $30 \mu\text{g/m}^2\text{-h}$ . These area-specific emission rates determined

from the product certifications of CDPH, BIFA, and other certification programs can be used as an initial estimate of the formaldehyde emission rate.

If the actual area-specific emission rates of a building material or furnishing is needed (i.e. the initial emission rates estimates from the product certifications are higher than desired), then that data can be acquired by requesting from the manufacturer the complete chemical emission rate test report. For instance if the complete CDPH emission test report is requested for a CDHP certified product, that report will provide the actual area-specific emission rates for not only the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017), but also all of the cancer and reproductive/developmental chemicals listed in the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), all of the toxic air contaminants (TACs) in the California Air Resources Board Toxic Air Contamination List (CARB, 2011), and the 10 chemicals with the greatest emission rates.

Alternatively, a sample of the building material or furnishing can be submitted to a chemical emission rate testing laboratory, such as Berkeley Analytical Laboratory (<https://berkeleyanalytical.com>), to measure the formaldehyde emission rate.

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4.) Calculate the Total Formaldehyde Emission Rate. For each IAQ Zone, calculate the total formaldehyde emission rate (i.e.  $\mu\text{g/h}$ ) from the individual formaldehyde emission rates from each of the building material/furnishings as determined in Step 3.

5.) Calculate the Indoor Formaldehyde Concentration. For each IAQ Zone, calculate the indoor formaldehyde concentration ( $\mu\text{g/m}^3$ ) from Equation 1 by dividing the total formaldehyde emission rates (i.e.  $\mu\text{g/h}$ ) as determined in Step 4, by the design minimum outdoor air ventilation rate ( $\text{m}^3/\text{h}$ ) for the IAQ Zone.

$$C_{in} = \frac{E_{total}}{Q_{oa}} \quad (\text{Equation 1})$$

where:

$C_{in}$  = indoor formaldehyde concentration ( $\mu\text{g/m}^3$ )

$E_{total}$  = total formaldehyde emission rate ( $\mu\text{g/h}$ ) into the IAQ Zone.

$Q_{oa}$  = design minimum outdoor air ventilation rate to the IAQ Zone ( $m^3/h$ )

The above Equation 1 is based upon mass balance theory, and is referenced in Section 3.10.2 “Calculation of Estimated Building Concentrations” of the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers”, (CDPH, 2017).

6.) Calculate the Indoor Exposure Cancer and Non-Cancer Health Risks. For each IAQ Zone, calculate the cancer and non-cancer health risks from the indoor formaldehyde concentrations determined in Step 5 and as described in the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines; Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015).

7.) Mitigate Indoor Formaldehyde Exposures of exceeding the CEQA Cancer and/or Non-Cancer Health Risks. In each IAQ Zone, provide mitigation for any formaldehyde exposure risk as determined in Step 6, that exceeds the CEQA cancer risk of 10 per million or the CEQA non-cancer Hazard Quotient of 1.0.

Provide the source and/or ventilation mitigation required in all IAQ Zones to reduce the health risks of the chemical exposures below the CEQA cancer and non-cancer health risks.

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Source mitigation for formaldehyde may include:

- 1.) reducing the amount materials and/or furnishings that emit formaldehyde
- 2.) substituting a different material with a lower area-specific emission rate of formaldehyde

Ventilation mitigation for formaldehyde emitted from building materials and/or furnishings may include:

- 1.) increasing the design minimum outdoor air ventilation rate to the IAQ Zone.

NOTE: Mitigating the formaldehyde emissions through use of less material/furnishings, or use of lower emitting materials/furnishings, is the preferred mitigation option, as

mitigation with increased outdoor air ventilation increases initial and operating costs associated with the heating/cooling systems.

Further, we are not asking that the builder “speculate” on what and how much composite materials be used, but rather at the design stage to select composite wood materials based on the formaldehyde emission rates that manufacturers routinely conduct using the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers,” (CDPH, 2017), and use the procedure described earlier above (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

**Outdoor Air Ventilation Impact.** Another important finding of the CNHS, was that the outdoor air ventilation rates in the homes were very low. Outdoor air ventilation is a very important factor influencing the indoor concentrations of air contaminants, as it is the primary removal mechanism of all indoor air generated contaminants. Lower outdoor air exchange rates cause indoor generated air contaminants to accumulate to higher indoor air concentrations. Many homeowners rarely open their windows or doors for ventilation as a result of their concerns for security/safety, noise, dust, and odor concerns (Price, 2007). In the CNHS field study, 32% of the homes did not use their windows during the 24-hour Test Day, and 15% of the homes did not use their windows during the entire preceding week. Most of the homes with no window usage were homes in the winter field session. Thus, a substantial percentage of homeowners never open their windows, especially in the winter season. The median 24-hour measurement was 0.26 air changes per hour (ach), with a range of 0.09 ach to 5.3 ach. A total of 67% of the homes had outdoor air exchange rates below the minimum California Building Code (2001) requirement of 0.35 ach. Thus, the relatively tight envelope construction, combined with the fact that many people never open their windows for ventilation, results in homes with low outdoor air exchange rates and higher indoor air contaminant concentrations.

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The Affinity Project, Pasadena, CA is close to roads with moderate to high traffic (e.g., South Arroyo Parkway, East Bellevue Drive, East California Boulevard, South Raymond Avenue, South Fair Oaks Avenue, Long Beach Freeway, etc.), and thus the Project site is a sound impacted site.

According to the Draft Environmental Impact Report – Affinity Project (Psomas, 2022), the existing noise levels range from 72 dBA CNEL along the eastern Project boundary and to 73 dBA CNEL along the southern Project boundary. Also, since these noise measurements were conducted September 9-10, 2021 during the pandemic when traffic volumes were reduced, the future post-pandemic sound levels will be higher.

As a result of the anticipated high outdoor noise levels, the current project will require a mechanical supply of outdoor air ventilation to allow for a habitable interior environment with closed windows and doors. Such a ventilation system would allow windows and doors to be kept closed at the occupant's discretion to control exterior noise within building interiors.

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**PM<sub>2.5</sub> Outdoor Concentrations Impact.** An additional impact of the nearby motor vehicle traffic associated with this project, are the outdoor concentrations of PM<sub>2.5</sub>. According to the Draft Environmental Impact Report – Affinity Project (Psomas, 2022), the Project is located in the South Coast Air Basin, which is a State and Federal non-attainment area for PM<sub>2.5</sub>.

An air quality analyses should to be conducted to determine the concentrations of PM<sub>2.5</sub> in the outdoor and indoor air that people inhale each day. This air quality analyses needs to consider the cumulative impacts of the project related emissions, existing and projected future emissions from local PM<sub>2.5</sub> sources (e.g. stationary sources, motor vehicles, and airport traffic) upon the outdoor air concentrations at the Project site. If the outdoor concentrations are determined to exceed the California and National annual average PM<sub>2.5</sub> exceedence concentration of 12 µg/m<sup>3</sup>, or the National 24-hour average exceedence concentration of 35 µg/m<sup>3</sup>, then the buildings need to have a mechanical supply of outdoor air that has air filtration with sufficient removal efficiency, such that the indoor

concentrations of outdoor PM<sub>2.5</sub> particles is less than the California and National PM<sub>2.5</sub> annual and 24-hour standards.

It is my experience that based on the projected high traffic noise levels, the annual average concentration of PM<sub>2.5</sub> will exceed the California and National PM<sub>2.5</sub> annual and 24-hour standards and warrant installation of high efficiency air filters (i.e. MERV 13 or higher) in all mechanically supplied outdoor air ventilation systems.

### **Indoor Air Quality Impact Mitigation Measures**

The following are recommended mitigation measures to minimize the impacts upon indoor quality:

Indoor Formaldehyde Concentrations Mitigation. Use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins (CARB, 2009). CARB Phase 2 certified composite wood products, or ultra-low emitting formaldehyde (ULEF) resins, do not insure indoor formaldehyde concentrations that are below the CEQA cancer risk of 10 per million. Only composite wood products manufactured with CARB approved no-added formaldehyde (NAF) resins, such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

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Alternatively, conduct the previously described Pre-Construction Building Material/Furnishing Chemical Emissions Assessment, to determine that the combination of formaldehyde emissions from building materials and furnishings do not create indoor formaldehyde concentrations that exceed the CEQA cancer and non-cancer health risks.

It is important to note that we are not asking that the builder “speculate” on what and how much composite materials be used, but rather at the design stage to select composite wood materials based on the formaldehyde emission rates that manufacturers routinely conduct using the California Department of Health “Standard Method for the Testing and

Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers”, (CDPH, 2017), and use the procedure described above (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Outdoor Air Ventilation Mitigation. Provide each habitable room with a continuous mechanical supply of outdoor air that meets or exceeds the California 2016 Building Energy Efficiency Standards (California Energy Commission, 2015) requirements of the greater of 15 cfm/occupant or 0.15 cfm/ft<sup>2</sup> of floor area. Following installation of the system conduct testing and balancing to insure that required amount of outdoor air is entering each habitable room and provide a written report documenting the outdoor airflow rates. Do not use exhaust only mechanical outdoor air systems, use only balanced outdoor air supply and exhaust systems or outdoor air supply only systems. Provide a manual for the occupants or maintenance personnel, that describes the purpose of the mechanical outdoor air system and the operation and maintenance requirements of the system.

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PM<sub>2.5</sub> Outdoor Air Concentration Mitigation. Install air filtration with sufficient PM<sub>2.5</sub> removal efficiency (e.g. MERV 13 or higher) to filter the outdoor air entering the mechanical outdoor air supply systems, such that the indoor concentrations of outdoor PM<sub>2.5</sub> particles are less than the California and National PM<sub>2.5</sub> annual and 24-hour standards. Install the air filters in the system such that they are accessible for replacement by the occupants or maintenance personnel. Include in the mechanical outdoor air ventilation system manual instructions on how to replace the air filters and the estimated frequency of replacement.

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## APPENDIX A

### INDOOR FORMALDEHYDE CONCENTRATIONS AND THE CARB FORMALDEHYDE ATCM

With respect to formaldehyde emissions from composite wood products, the CARB ATCM regulations of formaldehyde emissions from composite wood products, do not assure healthful indoor air quality. The following is the stated purpose of the CARB ATCM regulation - *The purpose of this airborne toxic control measure is to “reduce formaldehyde emissions from composite wood products, and finished goods that contain composite wood products, that are sold, offered for sale, supplied, used, or manufactured for sale in California”*. In other words, the CARB ATCM regulations do not “assure healthful indoor air quality”, but rather “reduce formaldehyde emissions from composite wood products”.

Just how much protection do the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products? Definitely some, but certainly the regulations do not “*assure healthful indoor air quality*” when CARB Phase 2 products are utilized. As shown in the Chan 2019 study of new California homes, the median indoor formaldehyde concentration was of 22.4  $\mu\text{g}/\text{m}^3$  (18.2 ppb), which corresponds to a cancer risk of 112 per million for occupants with continuous exposure, which is more than 11 times the CEQA cancer risk of 10 per million.

Another way of looking at how much protection the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products is to calculate the maximum number of square feet of composite wood product that can be in a residence without exceeding the CEQA cancer risk of 10 per million for occupants with continuous occupancy.

For this calculation I utilized the floor area (2,272  $\text{ft}^2$ ), the ceiling height (8.5 ft), and the number of bedrooms (4) as defined in Appendix B (New Single-Family Residence Scenario) of the Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers, Version 1.1, 2017, California

Department of Public Health, Richmond, CA. <https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx>.

For the outdoor air ventilation rate I used the 2019 Title 24 code required mechanical ventilation rate (ASHRAE 62.2) of 106 cfm (180 m<sup>3</sup>/h) calculated for this model residence. For the composite wood formaldehyde emission rates I used the CARB ATCM Phase 2 rates.

The calculated maximum number of square feet of composite wood product that can be in a residence, without exceeding the CEQA cancer risk of 10 per million for occupants with continuous occupancy are as follows for the different types of regulated composite wood products.

Medium Density Fiberboard (MDF) – 15 ft<sup>2</sup> (0.7% of the floor area), or  
Particle Board – 30 ft<sup>2</sup> (1.3% of the floor area), or  
Hardwood Plywood – 54 ft<sup>2</sup> (2.4% of the floor area), or  
Thin MDF – 46 ft<sup>2</sup> (2.0 % of the floor area).

For offices and hotels the calculated maximum amount of composite wood product (% of floor area) that can be used without exceeding the CEQA cancer risk of 10 per million for occupants, assuming 8 hours/day occupancy, and the California Mechanical Code minimum outdoor air ventilation rates are as follows for the different types of regulated composite wood products.

Medium Density Fiberboard (MDF) – 3.6 % (offices) and 4.6% (hotel rooms), or  
Particle Board – 7.2 % (offices) and 9.4% (hotel rooms), or  
Hardwood Plywood – 13 % (offices) and 17% (hotel rooms), or  
Thin MDF – 11 % (offices) and 14 % (hotel rooms)

Clearly the CARB ATCM does not regulate the formaldehyde emissions from composite wood products such that the potentially large areas of these products, such as for flooring, baseboards, interior doors, window and door trims, and kitchen and bathroom cabinetry,

could be used without causing indoor formaldehyde concentrations that result in CEQA cancer risks that substantially exceed 10 per million for occupants with continuous occupancy.

Even composite wood products manufactured with CARB certified ultra low emitting formaldehyde (ULEF) resins do not insure that the indoor air will have concentrations of formaldehyde that meet the OEHHA cancer risks that substantially exceed 10 per million. The permissible emission rates for ULEF composite wood products are only 11-15% lower than the CARB Phase 2 emission rates. Only use of composite wood products made with no-added formaldehyde resins (NAF), such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

If CARB Phase 2 compliant or ULEF composite wood products are utilized in construction, then the resulting indoor formaldehyde concentrations should be determined in the design phase using the specific amounts of each type of composite wood product, the specific formaldehyde emission rates, and the volume and outdoor air ventilation rates of the indoor spaces, and all feasible mitigation measures employed to reduce this impact (e.g. use less formaldehyde containing composite wood products and/or incorporate mechanical systems capable of higher outdoor air ventilation rates). See the procedure described earlier (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Alternatively, and perhaps a simpler approach, is to use only composite wood products (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins.

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## **Education**

M.S. Mechanical Engineering (1985)  
Stanford University, Stanford, CA.

Graduate Studies in Air Pollution Monitoring and Control (1980)  
University of California, Berkeley, CA.

B.S. in Mechanical Engineering (1976)  
Rensselaer Polytechnic Institute, Troy, N.Y.

## **Professional Experience**

President: Indoor Environmental Engineering, San Francisco, CA. December, 1981 - present.

Direct team of environmental scientists, chemists, and mechanical engineers in conducting State and Federal research regarding indoor air quality instrumentation development, building air quality field studies, ventilation and air cleaning performance measurements, and chemical emission rate testing.

Provide design side input to architects regarding selection of building materials and ventilation system components to ensure a high quality indoor environment.

Direct Indoor Air Quality Consulting Team for the winning design proposal for the new State of Washington Ecology Department building.

Develop a full-scale ventilation test facility for measuring the performance of air diffusers; ASHRAE 129, Air Change Effectiveness, and ASHRAE 113, Air Diffusion Performance Index.

Develop a chemical emission rate testing laboratory for measuring the chemical emissions from building materials, furnishings, and equipment.

Principle Investigator of the California New Homes Study (2005-2007). Measured ventilation and indoor air quality in 108 new single family detached homes in northern and southern California.

Develop and teach IAQ professional development workshops to building owners, managers, hygienists, and engineers.

Air Pollution Engineer: Earth Metrics Inc., Burlingame, CA, October, 1985 to March, 1987.

Responsible for development of an air pollution laboratory including installation a forced choice olfactometer, tracer gas electron capture chromatograph, and associated calibration facilities. Field team leader for studies of fugitive odor emissions from sewage treatment plants, entrainment of fume hood exhausts into computer chip fabrication rooms, and indoor air quality investigations.

Staff Scientist: Building Ventilation and Indoor Air Quality Program, Energy and Environment Division, Lawrence Berkeley Laboratory, Berkeley, CA. January, 1980 to August, 1984.

Deputy project leader for the Control Techniques group; responsible for laboratory and field studies aimed at evaluating the performance of indoor air pollutant control strategies (i.e. ventilation, filtration, precipitation, absorption, adsorption, and source control).

Coordinated field and laboratory studies of air-to-air heat exchangers including evaluation of thermal performance, ventilation efficiency, cross-stream contaminant transfer, and the effects of freezing/defrosting.

Developed an *in situ* test protocol for evaluating the performance of air cleaning systems and introduced the concept of effective cleaning rate (ECR) also known as the Clean Air Delivery Rate (CADR).

Coordinated laboratory studies of portable and ducted air cleaning systems and their effect on indoor concentrations of respirable particles and radon progeny.

Co-designed an automated instrument system for measuring residential ventilation rates and radon concentrations.

Designed hardware and software for a multi-channel automated data acquisition system used to evaluate the performance of air-to-air heat transfer equipment.

Assistant Chief Engineer: Alta Bates Hospital, Berkeley, CA, October, 1979 to January, 1980.

Responsible for energy management projects involving installation of power factor correction capacitors on large inductive electrical devices and installation of steam meters on physical plant steam lines. Member of Local 39, International Union of Operating Engineers.

Manufacturing Engineer: American Precision Industries, Buffalo, NY, October, 1977 to October, 1979.

Responsible for reorganizing the manufacturing procedures regarding production of shell and tube heat exchangers. Designed customized automatic assembly, welding, and testing equipment. Designed a large paint spray booth. Prepared economic studies justifying new equipment purchases. Safety Director.

Project Engineer: Arcata Graphics, Buffalo, N.Y. June, 1976 to October, 1977.

Responsible for the design and installation of a bulk ink storage and distribution system and high speed automatic counting and marking equipment. Also coordinated material handling studies which led to the purchase and installation of new equipment.

### **PROFESSIONAL ORGANIZATION MEMBERSHIP**

American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)

- Chairman of SPC-145P, Standards Project Committee - Test Method for Assessing the Performance of Gas Phase Air Cleaning Equipment (1991-1992)
- Member SPC-129P, Standards Project Committee - Test Method for Ventilation Effectiveness (1986-97)
  - Member of Drafting Committee
- Member Environmental Health Committee (1992-1994, 1997-2001, 2007-2010)
  - Chairman of EHC Research Subcommittee
  - Member of Man Made Mineral Fiber Position Paper Subcommittee
  - Member of the IAQ Position Paper Committee
  - Member of the Legionella Position Paper Committee
  - Member of the Limiting Indoor Mold and Dampness in Buildings Position Paper Committee
- Member SSPC-62, Standing Standards Project Committee - Ventilation for Acceptable Indoor Air Quality (1992 to 2000)
  - Chairman of Source Control and Air Cleaning Subcommittee
- Chairman of TC-4.10, Indoor Environmental Modeling (1988-92)
  - Member of Research Subcommittee
- Chairman of TC-2.3, Gaseous Air Contaminants and Control Equipment (1989-92)
  - Member of Research Subcommittee

American Society for Testing and Materials (ASTM)

- D-22 Sampling and Analysis of Atmospheres
  - Member of Indoor Air Quality Subcommittee
- E-06 Performance of Building Constructions

American Board of Industrial Hygiene (ABIH)

American Conference of Governmental Industrial Hygienists (ACGIH)

- Bioaerosols Committee (2007-2013)



American Industrial Hygiene Association (AIHA)

Cal-OSHA Indoor Air Quality Advisory Committee

International Society of Indoor Air Quality and Climate (ISIAQ)

- Co-Chairman of Task Force on HVAC Hygiene

U. S. Green Building Council (USGBC)

- Member of the IEQ Technical Advisory Group (2007-2009)
- Member of the IAQ Performance Testing Work Group (2010-2012)

Western Construction Consultants (WESTCON)

## **PROFESSIONAL CREDENTIALS**

Licensed Professional Engineer - Mechanical Engineering

Certified Industrial Hygienist - American Board of Industrial Hygienists

## **SCIENTIFIC MEETINGS AND SYMPOSIA**

Biological Contamination, Diagnosis, and Mitigation, Indoor Air'90, Toronto, Canada, August, 1990.

Models for Predicting Air Quality, Indoor Air'90, Toronto, Canada, August, 1990.

Microbes in Building Materials and Systems, Indoor Air '93, Helsinki, Finland, July, 1993.

Microorganisms in Indoor Air Assessment and Evaluation of Health Effects and Probable Causes, Walnut Creek, CA, February 27, 1997.

Controlling Microbial Moisture Problems in Buildings, Walnut Creek, CA, February 27, 1997.

Scientific Advisory Committee, Roomvent 98, 6<sup>th</sup> International Conference on Air Distribution in Rooms, KTH, Stockholm, Sweden, June 14-17, 1998.

Moisture and Mould, Indoor Air '99, Edinburgh, Scotland, August, 1999.

Ventilation Modeling and Simulation, Indoor Air '99, Edinburgh, Scotland, August, 1999.

Microbial Growth in Materials, Healthy Buildings 2000, Espoo, Finland, August, 2000.

Co-Chair, Bioaerosols X- Exposures in Residences, Indoor Air 2002, Monterey, CA, July 2002.

Healthy Indoor Environments, Anaheim, CA, April 2003.

Chair, Environmental Tobacco Smoke in Multi-Family Homes, Indoor Air 2008, Copenhagen, Denmark, July 2008.

Co-Chair, ISIAQ Task Force Workshop; HVAC Hygiene, Indoor Air 2002, Monterey, CA, July 2002.

Chair, ETS in Multi-Family Housing: Exposures, Controls, and Legalities Forum, Healthy Buildings 2009, Syracuse, CA, September 14, 2009.

Chair, Energy Conservation and IAQ in Residences Workshop, Indoor Air 2011, Austin, TX, June 6, 2011.

Chair, Electronic Cigarettes: Chemical Emissions and Exposures Colloquium, Indoor Air 2016, Ghent, Belgium, July 4, 2016.

### **SPECIAL CONSULTATION**

Provide consultation to the American Home Appliance Manufacturers on the development of a standard for testing portable air cleaners, AHAM Standard AC-1.

Served as an expert witness and special consultant for the U.S. Federal Trade Commission regarding the performance claims found in advertisements of portable air cleaners and residential furnace filters.

Conducted a forensic investigation for a San Mateo, CA pro se defendant, regarding an alleged homicide where the victim was kidnapped in a steamer trunk. Determined the air exchange rate in the steamer trunk and how long the person could survive.

Conducted *in situ* measurement of human exposure to toluene fumes released during nailpolish application for a plaintiffs attorney pursuing a California Proposition 65 product labeling case. June, 1993.

Conducted a forensic *in situ* investigation for the Butte County, CA Sheriff's Department of the emissions of a portable heater used in the bedroom of two twin one year old girls who suffered simultaneous crib death.

Consult with OSHA on the 1995 proposed new regulation regarding indoor air quality and environmental tobacco smoke.

Consult with EPA on the proposed Building Alliance program and with OSHA on the proposed new OSHA IAQ regulation.

Johnson Controls Audit/Certification Expert Review; Milwaukee, WI. May 28-29, 1997.

Winner of the nationally published 1999 Request for Proposals by the State of Washington to conduct a comprehensive indoor air quality investigation of the Washington State Department of Ecology building in Lacey, WA.

Selected by the State of California Attorney General's Office in August, 2000 to conduct a comprehensive indoor air quality investigation of the Tulare County Court House.

Lawrence Berkeley Laboratory IAQ Experts Workshop: "Cause and Prevention of Sick Building Problems in Offices: The Experience of Indoor Environmental Quality Investigators", Berkeley, California, May 26-27, 2004.

Provide consultation and chemical emission rate testing to the State of California Attorney General's Office in 2013-2015 regarding the chemical emissions from e-cigarettes.

#### **PEER-REVIEWED PUBLICATIONS :**

F.J.Offermann, C.D.Hollowell, and G.D.Roseme, "Low-Infiltration Housing in Rochester, New York: A Study of Air Exchange Rates and Indoor Air Quality," *Environment International*, 8, pp. 435-445, 1982.

W.W.Nazaroff, F.J.Offermann, and A.W.Robb, "Automated System for Measuring Air Exchange Rate and Radon Concentration in Houses," *Health Physics*, 45, pp. 525-537, 1983.

F.J.Offermann, W.J.Fisk, D.T.Grimsrud, B.Pedersen, and K.L.Revzan, "Ventilation Efficiencies of Wall- or Window-Mounted Residential Air-to-Air Heat Exchangers," *ASHRAE Annual Transactions*, 89-2B, pp 507-527, 1983.

W.J.Fisk, K.M.Archer, R.E Chant, D. Hekmat, F.J.Offermann, and B.Pedersen, "Onset of Freezing in Residential Air-to-Air Heat Exchangers," *ASHRAE Annual Transactions*, 91-1B, 1984.

W.J.Fisk, K.M.Archer, R.E Chant, D. Hekmat, F.J.Offermann, and B.Pedersen, "Performance of Residential Air-to-Air Heat Exchangers During Operation with Freezing and Periodic Defrosts," *ASHRAE Annual Transactions*, 91-1B, 1984.

F.J.Offermann, R.G.Sextro, W.J.Fisk, D.T.Grimsrud, W.W.Nazaroff, A.V.Nero, and K.L.Revzan, "Control of Respirable Particles with Portable Air Cleaners," *Atmospheric Environment*, Vol. 19, pp.1761-1771, 1985.

R.G.Sextro, F.J.Offermann, W.W.Nazaroff, A.V.Nero, K.L.Revzan, and J.Yater, "Evaluation of Indoor Control Devices and Their Effects on Radon Progeny Concentrations," *Atmospheric Environment*, *12*, pp. 429-438, 1986.

W.J. Fisk, R.K.Spencer, F.J.Offermann, R.K.Spencer, B.Pedersen, R.Sextro, "Indoor Air Quality Control Techniques," *Noyes Data Corporation*, Park Ridge, New Jersey, (1987).

F.J.Offermann, "Ventilation Effectiveness and ADPI Measurements of a Forced Air Heating System," *ASHRAE Transactions* , Volume 94, Part 1, pp 694-704, 1988.

F.J.Offermann and D. Int-Hout "Ventilation Effectiveness Measurements of Three Supply/Return Air Configurations," *Environment International* , Volume 15, pp 585-592 1989.

F.J. Offermann, S.A. Loiselle, M.C. Quinlan, and M.S. Rogers, "A Study of Diesel Fume Entrainment in an Office Building," *IAQ '89*, The Human Equation: Health and Comfort, pp 179-183, ASHRAE, Atlanta, GA, 1989.

R.G.Sextro and F.J.Offermann, "Reduction of Residential Indoor Particle and Radon Progeny Concentrations with Ducted Air Cleaning Systems," submitted to *Indoor Air*, 1990.

S.A.Loiselle, A.T.Hodgson, and F.J.Offermann, "Development of An Indoor Air Sampler for Polycyclic Aromatic Compounds", *Indoor Air* , Vol 2, pp 191-210, 1991.

F.J.Offermann, S.A.Loiselle, A.T.Hodgson, L.A. Gundel, and J.M. Daisey, "A Pilot Study to Measure Indoor Concentrations and Emission Rates of Polycyclic Aromatic Compounds", *Indoor Air* , Vol 4, pp 497-512, 1991.

F.J. Offermann, S. A. Loiselle, R.G. Sextro, "Performance Comparisons of Six Different Air Cleaners Installed in a Residential Forced Air Ventilation System," *IAQ'91*, Healthy Buildings, pp 342-350, ASHRAE, Atlanta, GA (1991).

F.J. Offermann, J. Daisey, A. Hodgson, L. Gundell, and S. Loiselle, "Indoor Concentrations and Emission Rates of Polycyclic Aromatic Compounds", *Indoor Air*, Vol 4, pp 497-512 (1992).

F.J. Offermann, S. A. Loiselle, R.G. Sextro, "Performance of Air Cleaners Installed in a Residential Forced Air System," *ASHRAE Journal*, pp 51-57, July, 1992.

F.J. Offermann and S. A. Loiselle, "Performance of an Air-Cleaning System in an Archival Book Storage Facility," *IAQ'92*, ASHRAE, Atlanta, GA, 1992.

S.B. Hayward, K.S. Liu, L.E. Alevantis, K. Shah, S. Loiselle, F.J. Offermann, Y.L. Chang, L. Webber, "Effectiveness of Ventilation and Other Controls in Reducing Exposure to ETS in Office Buildings," *Indoor Air '93*, Helsinki, Finland, July 4-8, 1993.

F.J. Offermann, S. A. Loiselle, G. Ander, H. Lau, "Indoor Contaminant Emission Rates Before and After a Building Bake-out," *IAQ'93*, Operating and Maintaining Buildings for Health, Comfort, and Productivity, pp 157-163, ASHRAE, Atlanta, GA, 1993.

L.E. Alevantis, Hayward, S.B., Shah, S.B., Loiselle, S., and Offermann, F.J. "Tracer Gas Techniques for Determination of the Effectiveness of Pollutant Removal From Local Sources," *IAQ '93*, Operating and Maintaining Buildings for Health, Comfort, and Productivity, pp 119-129, ASHRAE, Atlanta, GA, 1993.

L.E. Alevantis, Liu, L.E., Hayward, S.B., Offermann, F.J., Shah, S.B., Leiserson, K. Tsao, E., and Huang, Y., "Effectiveness of Ventilation in 23 Designated Smoking Areas in California Buildings," *IAQ '94*, Engineering Indoor Environments, pp 167-181, ASHRAE, Atlanta, GA, 1994.

L.E. Alevantis, Offermann, F.J., Loiselle, S., and Macher, J.M., "Pressure and Ventilation Requirements of Hospital Isolation Rooms for Tuberculosis (TB) Patients: Existing Guidelines in the United States and a Method for Measuring Room Leakage", Ventilation and Indoor air quality in Hospitals, M. Maroni, editor, Kluwer Academic publishers, Netherlands, 1996.

F.J. Offermann, M. A. Waz, A.T. Hodgson, and H.M. Ammann, "Chemical Emissions from a Hospital Operating Room Air Filter," *IAQ'96*, Paths to Better Building Environments, pp 95-99, ASHRAE, Atlanta, GA, 1996.

F.J. Offermann, "Professional Malpractice and the Sick Building Investigator," *IAQ'96*, Paths to Better Building Environments, pp 132-136, ASHRAE, Atlanta, GA, 1996.

F.J. Offermann, "Standard Method of Measuring Air Change Effectiveness," *Indoor Air*, Vol 1, pp.206-211, 1999.

F. J. Offermann, A. T. Hodgson, and J. P. Robertson, "Contaminant Emission Rates from PVC Backed Carpet Tiles on Damp Concrete", Healthy Buildings 2000, Espoo, Finland, August 2000.

K.S. Liu, L.E. Alevantis, and F.J. Offermann, "A Survey of Environmental Tobacco Smoke Controls in California Office Buildings", *Indoor Air*, Vol 11, pp. 26-34, 2001.

F.J. Offermann, R. Colfer, P. Radzinski, and J. Robertson, "Exposure to Environmental Tobacco Smoke in an Automobile", Indoor Air 2002, Monterey, California, July 2002.

F. J. Offermann, J.P. Robertson, and T. Webster, "The Impact of Tracer Gas Mixing on Airflow Rate Measurements in Large Commercial Fan Systems", Indoor Air 2002, Monterey, California, July 2002.

M. J. Mendell, T. Brennan, L. Hathon, J.D. Odom, F.J. Offermann, B.H. Turk, K.M. Wallingford, R.C. Diamond, W.J. Fisk, "Causes and prevention of Symptom Complaints

in Office Buildings: Distilling the Experience of Indoor Environmental Investigators”, submitted to Indoor Air 2005, Beijing, China, September 4-9, 2005.

F.J. Offermann, “Ventilation and IAQ in New Homes With and Without Mechanical Outdoor Air Systems”, Healthy Buildings 2009, Syracuse, CA, September 14, 2009.

F.J. Offermann, “ASHRAE 62.2 Intermittent Residential Ventilation: What’s It Good For, Intermittently Poor IAQ”, IAQVEC 2010, Syracuse, CA, April 21, 2010.

F.J. Offermann and A.T. Hodgson, “Emission Rates of Volatile Organic Compounds in New Homes”, Indoor Air 2011, Austin, TX, June, 2011.

P. Jenkins, R. Johnson, T. Phillips, and F. Offermann, “Chemical Concentrations in New California Homes and Garages”, Indoor Air 2011, Austin, TX, June, 2011.

W. J. Mills, B. J. Grigg, F. J. Offermann, B. E. Gustin, and N. E. Spingarm, “Toluene and Methyl Ethyl Ketone Exposure from a Commercially Available Contact Adhesive”, Journal of Occupational and Environmental Hygiene, 9:D95-D102 May, 2012.

F. J. Offermann, R. Maddalena, J. C. Offermann, B. C. Singer, and H. Wilhelm, “The Impact of Ventilation on the Emission Rates of Volatile Organic Compounds in Residences”, HB 2012, Brisbane, AU, July, 2012.

F. J. Offermann, A. T. Hodgson, P. L. Jenkins, R. D. Johnson, and T. J. Phillips, “Attached Garages as a Source of Volatile Organic Compounds in New Homes”, HB 2012, Brisbane, CA, July, 2012.

R. Maddalena, N. Li, F. Offermann, and B. Singer, “Maximizing Information from Residential Measurements of Volatile Organic Compounds”, HB 2012, Brisbane, AU, July, 2012.

W. Chen, A. Persily, A. Hodgson, F. Offermann, D. Poppendieck, and K. Kumagai, “Area-Specific Airflow Rates for Evaluating the Impacts of VOC emissions in U.S. Single-Family Homes”, Building and Environment, Vol. 71, 204-211, February, 2014.

F. J. Offermann, A. Eagan A. C. Offermann, and L. J. Radonovich, “Infectious Disease Aerosol Exposures With and Without Surge Control Ventilation System Modifications”, Indoor Air 2014, Hong Kong, July, 2014.

F. J. Offermann, “Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures”, Building and Environment, Vol. 93, Part 1, 101-105, November, 2015.

F. J. Offermann, “Formaldehyde Emission Rates From Lumber Liquidators Laminate Flooring Manufactured in China”, Indoor Air 2016, Belgium, Ghent, July, 2016.

F. J. Offermann, “Formaldehyde and Acetaldehyde Emission Rates for E-Cigarettes”, Indoor Air 2016, Belgium, Ghent, July, 2016.

## **OTHER REPORTS:**

W.J.Fisk, P.G.Cleary, and F.J.Offermann, "Energy Saving Ventilation with Residential Heat Exchangers," a Lawrence Berkeley Laboratory brochure distributed by the Bonneville Power Administration, 1981.

F.J.Offermann, J.R.Girman, and C.D.Hollowell, "Midway House Tightening Project: A Study of Indoor Air Quality," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-12777, 1981.

F.J.Offermann, J.B.Dickinson, W.J.Fisk, D.T.Grimsrud, C.D.Hollowell, D.L.Krinkle, and G.D.Roseme, "Residential Air-Leakage and Indoor Air Quality in Rochester, New York," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-13100, 1982.

F.J.Offermann, W.J.Fisk, B.Pedersen, and K.L.Revzan, Residential Air-to-Air Heat Exchangers: A Study of the Ventilation Efficiencies of Wall- or Window- Mounted Units," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-14358, 1982.

F.J.Offermann, W.J.Fisk, W.W.Nazaroff, and R.G.Sextro, "A Review of Portable Air Cleaners for Controlling Indoor Concentrations of Particulates and Radon Progeny," An interim report for the Bonneville Power Administration, 1983.

W.J.Fisk, K.M.Archer, R.E.Chant, D.Hekmat, F.J.Offermann, and B.S. Pedersen, "Freezing in Residential Air-to-Air Heat Exchangers: An Experimental Study," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-16783, 1983.

R.G.Sextro, W.W.Nazaroff, F.J.Offermann, and K.L.Revzan, "Measurements of Indoor Aerosol Properties and Their Effect on Radon Progeny," Proceedings of the American Association of Aerosol Research Annual Meeting, April, 1983.

F.J.Offermann, R.G.Sextro, W.J.Fisk, W.W. Nazaroff, A.V.Nero, K.L.Revzan, and J.Yater, "Control of Respirable Particles and Radon Progeny with Portable Air Cleaners," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-16659, 1984.

W.J.Fisk, R.K.Spencer, D.T.Grimsrud, F.J.Offermann, B.Pedersen, and R.G.Sextro, "Indoor Air Quality Control Techniques: A Critical Review," Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-16493, 1984.

F.J.Offermann, J.R.Girman, and R.G.Sextro, "Controlling Indoor Air Pollution from Tobacco Smoke: Models and Measurements," Indoor Air, Proceedings of the 3rd International Conference on Indoor Air Quality and Climate, Vol 1, pp 257-264, Swedish Council for Building Research, Stockholm (1984), Lawrence Berkeley Laboratory, Berkeley, CA, Report LBL-17603, 1984.

R.Otto, J.Girman, F.Offermann, and R.Sextro, "A New Method for the Collection and Comparison of Respirable Particles in the Indoor Environment," Lawrence Berkeley Laboratory, Berkeley, CA, Special Director Fund's Study, 1984.

A.T.Hodgson and F.J.Offermann, "Examination of a Sick Office Building," Lawrence Berkeley Laboratory, Berkeley, CA, an informal field study, 1984.

R.G.Sextro, F.J.Offermann, W.W.Nazaroff, and A.V.Nero, "Effects of Aerosol Concentrations on Radon Progeny," *Aerosols, Science, & Technology, and Industrial Applications of Airborne Particles*, editors B.Y.H.Liu, D.Y.H.Pui, and H.J.Fissan, p525, Elsevier, 1984.

K.Sexton, S.Hayward, F.Offermann, R.Sextro, and L.Weber, "Characterization of Particulate and Organic Emissions from Major Indoor Sources, Proceedings of the Third International Conference on Indoor Air Quality and Climate, Stockholm, Sweden, August 20-24, 1984.

F.J.Offermann, "Tracer Gas Measurements of Laboratory Fume Entrainment at a Semiconductor Manufacturing Plant," an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Tracer Gas Measurements of Ventilation Rates in a Large Office Building," an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Measurements of Volatile Organic Compounds in a New Large Office Building with Adhesive Fastened Carpeting," an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Designing and Operating Healthy Buildings", an Indoor Environmental Engineering R&D Report, 1986.

F.J.Offermann, "Measurements and Mitigation of Indoor Spray-Applied Pesticides", an Indoor Environmental Engineering R&D Report, 1988.

F.J.Offermann and S. Loiselle, "Measurements and Mitigation of Indoor Mold Contamination in a Residence", an Indoor Environmental Engineering R&D Report, 1989.

F.J.Offermann and S. Loiselle, "Performance Measurements of an Air Cleaning System in a Large Archival Library Storage Facility", an Indoor Environmental Engineering R&D Report, 1989.

F.J. Offermann, J.M. Daisey, L.A. Gundel, and A.T. Hodgson, S. A. Loiselle, "Sampling, Analysis, and Data Validation of Indoor Concentrations of Polycyclic Aromatic Hydrocarbons", Final Report, Contract No. A732-106, California Air Resources Board, March, 1990.



L.A. Gundel, J.M. Daisey, and F.J. Offermann, "A Sampling and Analytical Method for Gas Phase Polycyclic Aromatic Hydrocarbons", Proceedings of the 5th International Conference on Indoor Air Quality and Climate, Indoor Air '90, July 29-August 1990.

A.T. Hodgson, J.M. Daisey, and F.J. Offermann "Development of an Indoor Sampling and Analytical Method for Particulate Polycyclic Aromatic Hydrocarbons", Proceedings of the 5th International Conference on Indoor Air Quality and Climate, Indoor Air '90, July 29-August, 1990.

F.J. Offermann, J.O. Sateri, "Tracer Gas Measurements in Large Multi-Room Buildings", Indoor Air '93, Helsinki, Finland, July 4-8, 1993.

F.J. Offermann, M. T. O'Flaherty, and M. A. Waz "Validation of ASHRAE 129 - Standard Method of Measuring Air Change Effectiveness", Final Report of ASHRAE Research Project 891, December 8, 1997.

S.E. Guffey, F.J. Offermann et. al., "Proceedings of the Workshop on Ventilation Engineering Controls for Environmental Tobacco smoke in the Hospitality Industry", U.S. Department of Labor Occupational Safety and Health Administration and ACGIH, 1998.

F.J. Offermann, R.J. Fiskum, D. Kosar, and D. Mudaari, "A Practical Guide to Ventilation Practices & Systems for Existing Buildings", *Heating/Piping/Air Conditioning Engineering* supplement to April/May 1999 issue.

F.J. Offermann, P. Pasanen, "Workshop 18: Criteria for Cleaning of Air Handling Systems", Healthy Buildings 2000, Espoo, Finland, August 2000.

F.J. Offermann, Session Summaries: Building Investigations, and Design & Construction, Healthy Buildings 2000, Espoo, Finland, August 2000.

F.J. Offermann, "The IAQ Top 10", Engineered Systems, November, 2008.

L. Kincaid and F.J. Offermann, "Unintended Consequences: Formaldehyde Exposures in Green Homes, AIHA Synergist, February, 2010.

F.J. Offermann, "IAQ in Air Tight Homes", ASHRAE Journal, November, 2010.

F.J. Offermann, "The Hazards of E-Cigarettes", ASHRAE Journal, June, 2014.

## **PRESENTATIONS :**

"Low-Infiltration Housing in Rochester, New York: A Study of Air Exchange Rates and Indoor Air Quality," Presented at the International Symposium on Indoor Air Pollution, Health and Energy Conservation, Amherst, MA, October 13-16, 1981.

"Ventilation Efficiencies of Wall- or Window-Mounted Residential Air-to-Air Heat Exchangers," Presented at the American Society of Heating, Refrigeration, and Air Conditioning Engineers Summer Meeting, Washington, DC, June, 1983.

"Controlling Indoor Air Pollution from Tobacco Smoke: Models and Measurements," Presented at the Third International Conference on Indoor Air Quality and Climate, Stockholm, Sweden, August 20-24, 1984.

"Indoor Air Pollution: An Emerging Environmental Problem", Presented to the Association of Environmental Professionals, Bar Area/Coastal Region 1, Berkeley, CA, May 29, 1986.

"Ventilation Measurement Techniques," Presented at the Workshop on Sampling and Analytical Techniques, Georgia Institute of Technology, Atlanta, Georgia, September 26, 1986 and September 25, 1987.

"Buildings That Make You Sick: Indoor Air Pollution", Presented to the Sacramento Association of Professional Energy Managers, Sacramento, CA, November 18, 1986.

"Ventilation Effectiveness and Indoor Air Quality", Presented to the American Society of Heating, Refrigeration, and Air Conditioning Engineers Northern Nevada Chapter, Reno, NV, February 18, 1987, Golden Gate Chapter, San Francisco, CA, October 1, 1987, and the San Jose Chapter, San Jose, CA, June 9, 1987.

"Tracer Gas Techniques for Studying Ventilation," Presented at the Indoor Air Quality Symposium, Georgia Tech Research Institute, Atlanta, GA, September 22-24, 1987.

"Indoor Air Quality Control: What Works, What Doesn't," Presented to the Sacramento Association of Professional Energy Managers, Sacramento, CA, November 17, 1987.

"Ventilation Effectiveness and ADPI Measurements of a Forced Air Heating System," Presented at the American Society of Heating, Refrigeration, and Air Conditioning Engineers Winter Meeting, Dallas, Texas, January 31, 1988.

"Indoor Air Quality, Ventilation, and Energy in Commercial Buildings", Presented at the Building Owners & Managers Association of Sacramento, Sacramento, CA, July 21, 1988.

"Controlling Indoor Air Quality: The New ASHRAE Ventilation Standards and How to Evaluate Indoor Air Quality", Presented at a conference "Improving Energy Efficiency and Indoor Air Quality in Commercial Buildings," National Energy Management Institute, Reno, Nevada, November 4, 1988.

"A Study of Diesel Fume Entrainment Into an Office Building," Presented at Indoor Air '89: The Human Equation: Health and Comfort, American Society of Heating, Refrigeration, and Air Conditioning Engineers, San Diego, CA, April 17-20, 1989.

"Indoor Air Quality in Commercial Office Buildings," Presented at the Renewable Energy Technologies Symposium and International Exposition, Santa Clara, CA June 20, 1989.

"Building Ventilation and Indoor Air Quality", Presented to the San Joaquin Chapter of the American Society of Heating, Refrigeration, and Air Conditioning Engineers, September 7, 1989.

"How to Meet New Ventilation Standards: Indoor Air Quality and Energy Efficiency," a workshop presented by the Association of Energy Engineers; Chicago, IL, March 20-21, 1989; Atlanta, GA, May 25-26, 1989; San Francisco, CA, October 19-20, 1989; Orlando, FL, December 11-12, 1989; Houston, TX, January 29-30, 1990; Washington D.C., February 26-27, 1990; Anchorage, Alaska, March 23, 1990; Las Vegas, NV, April 23-24, 1990; Atlantic City, NJ, September 27-28, 1991; Anaheim, CA, November 19-20, 1991; Orlando, FL, February 28 - March 1, 1991; Washington, DC, March 20-21, 1991; Chicago, IL, May 16-17, 1991; Lake Tahoe, NV, August 15-16, 1991; Atlantic City, NJ, November 18-19, 1991; San Jose, CA, March 23-24, 1992.

"Indoor Air Quality," a seminar presented by the Anchorage, Alaska Chapter of the American Society of Heating, Refrigeration, and Air Conditioning Engineers, March 23, 1990.

"Ventilation and Indoor Air Quality", Presented at the 1990 HVAC & Building Systems Congress, Santa Clara, CA, March 29, 1990.

"Ventilation Standards for Office Buildings", Presented to the South Bay Property Managers Association, Santa Clara, May 9, 1990.

"Indoor Air Quality", Presented at the Responsive Energy Technologies Symposium & International Exposition (RETSIE), Santa Clara, CA, June 20, 1990.

"Indoor Air Quality - Management and Control Strategies", Presented at the Association of Energy Engineers, San Francisco Bay Area Chapter Meeting, Berkeley, CA, September 25, 1990.

"Diagnosing Indoor Air Contaminant and Odor Problems", Presented at the ASHRAE Annual Meeting, New York City, NY, January 23, 1991.

"Diagnosing and Treating the Sick Building Syndrome", Presented at the Energy 2001, Oklahoma, OK, March 19, 1991.

"Diagnosing and Mitigating Indoor Air Quality Problems" a workshop presented by the Association of Energy Engineers, Chicago, IL, October 29-30, 1990; New York, NY, January 24-25, 1991; Anaheim, April 25-26, 1991; Boston, MA, June 10-11, 1991; Atlanta, GA, October 24-25, 1991; Chicago, IL, October 3-4, 1991; Las Vegas, NV, December 16-17, 1991; Anaheim, CA, January 30-31, 1992; Atlanta, GA, March 5-6, 1992; Washington, DC, May 7-8, 1992; Chicago, IL, August 19-20, 1992; Las Vegas,

NV, October 1-2, 1992; New York City, NY, October 26-27, 1992, Las Vegas, NV, March 18-19, 1993; Lake Tahoe, CA, July 14-15, 1994; Las Vegas, NV, April 3-4, 1995; Lake Tahoe, CA, July 11-12, 1996; Miami, FL, December 9-10, 1996.

"Sick Building Syndrome and the Ventilation Engineer", Presented to the San Jose Engineers Club, May, 21, 1991.

"Duct Cleaning: Who Needs It ? How Is It Done ? What Are The Costs ?" What Are the Risks ?, Moderator of Forum at the ASHRAE Annual Meeting, Indianapolis ID, June 23, 1991.

"Operating Healthy Buildings", Association of Plant Engineers, Oakland, CA, November 14, 1991.

"Duct Cleaning Perspectives", Moderator of Seminar at the ASHRAE Semi-Annual Meeting, Indianapolis, IN, June 24, 1991.

"Duct Cleaning: The Role of the Environmental Hygienist," ASHRAE Annual Meeting, Anaheim, CA, January 29, 1992.

"Emerging IAQ Issues", Fifth National Conference on Indoor Air Pollution, University of Tulsa, Tulsa, OK, April 13-14, 1992.

"International Symposium on Room Air Convection and Ventilation Effectiveness", Member of Scientific Advisory Board, University of Tokyo, July 22-24, 1992.

"Guidelines for Contaminant Control During Construction and Renovation Projects in Office Buildings," Seminar paper at the ASHRAE Annual Meeting, Chicago, IL, January 26, 1993.

"Outside Air Economizers: IAQ Friend or Foe", Moderator of Forum at the ASHRAE Annual Meeting, Chicago, IL, January 26, 1993.

"Orientation to Indoor Air Quality," an EPA two and one half day comprehensive indoor air quality introductory workshop for public officials and building property managers; Sacramento, September 28-30, 1992; San Francisco, February 23-24, 1993; Los Angeles, March 16-18, 1993; Burbank, June 23, 1993; Hawaii, August 24-25, 1993; Las Vegas, August 30, 1993; San Diego, September 13-14, 1993; Phoenix, October 18-19, 1993; Reno, November 14-16, 1995; Fullerton, December 3-4, 1996; Fresno, May 13-14, 1997.

"Building Air Quality: A Guide for Building Owners and Facility Managers," an EPA one half day indoor air quality introductory workshop for building owners and facility managers. Presented throughout Region IX 1993-1995.

"Techniques for Airborne Disease Control", EPRI Healthcare Initiative Symposium; San Francisco, CA; June 7, 1994.

“Diagnosing and Mitigating Indoor Air Quality Problems”, CIHC Conference; San Francisco, September 29, 1994.

”Indoor Air Quality: Tools for Schools,” an EPA one day air quality management workshop for school officials, teachers, and maintenance personnel; San Francisco, October 18-20, 1994; Cerritos, December 5, 1996; Fresno, February 26, 1997; San Jose, March 27, 1997; Riverside, March 5, 1997; San Diego, March 6, 1997; Fullerton, November 13, 1997; Santa Rosa, February 1998; Cerritos, February 26, 1998; Santa Rosa, March 2, 1998.

ASHRAE 62 Standard “Ventilation for Acceptable IAQ”, ASCR Convention; San Francisco, CA, March 16, 1995.

“New Developments in Indoor Air Quality: Protocol for Diagnosing IAQ Problems”, AIHA-NC; March 25, 1995.

"Experimental Validation of ASHRAE SPC 129, Standard Method of Measuring Air Change Effectiveness", 16th AIVC Conference, Palm Springs, USA, September 19-22, 1995.

“Diagnostic Protocols for Building IAQ Assessment”, American Society of Safety Engineers Seminar: ‘Indoor Air Quality – The Next Door’; San Jose Chapter, September 27, 1995; Oakland Chapter, 9, 1997.

“Diagnostic Protocols for Building IAQ Assessment”, Local 39; Oakland, CA, October 3, 1995.

“Diagnostic Protocols for Solving IAQ Problems”, CSU-PPD Conference; October 24, 1995.

“Demonstrating Compliance with ASHRAE 62-1989 Ventilation Requirements”, AIHA; October 25, 1995.

“IAQ Diagnostics: Hands on Assessment of Building Ventilation and Pollutant Transport”, EPA Region IX; Phoenix, AZ, March 12, 1996; San Francisco, CA, April 9, 1996; Burbank, CA, April 12, 1996.

“Experimental Validation of ASHRAE 129P: Standard Method of Measuring Air Change Effectiveness”, Room Vent ‘96 / International Symposium on Room Air Convection and Ventilation Effectiveness”; Yokohama, Japan, July 16-19, 1996.

“IAQ Diagnostic Methodologies and RFP Development”, CCEHSA 1996 Annual Conference, Humboldt State University, Arcata, CA, August 2, 1996.

“The Practical Side of Indoor Air Quality Assessments”, California Industrial Hygiene Conference ‘96, San Diego, CA, September 2, 1996.

“ASHRAE Standard 62: Improving Indoor Environments”, Pacific Gas and Electric Energy Center, San Francisco, CA, October 29, 1996.

“Operating and Maintaining Healthy Buildings”, April 3-4, 1996, San Jose, CA; July 30, 1997, Monterey, CA.

“IAQ Primer”, Local 39, April 16, 1997; Amdahl Corporation, June 9, 1997; State Compensation Insurance Fund’s Safety & Health Services Department, November 21, 1996.

“Tracer Gas Techniques for Measuring Building Air Flow Rates”, ASHRAE, Philadelphia, PA, January 26, 1997.

“How to Diagnose and Mitigate Indoor Air Quality Problems”; Women in Waste; March 19, 1997.

“Environmental Engineer: What Is It?”, Monte Vista High School Career Day; April 10, 1997.

“Indoor Environment Controls: What’s Hot and What’s Not”, Shaklee Corporation; San Francisco, CA, July 15, 1997.

“Measurement of Ventilation System Performance Parameters in the US EPA BASE Study”, Healthy Buildings/IAQ’97, Washington, DC, September 29, 1997.

“Operations and Maintenance for Healthy and Comfortable Indoor Environments”, PASMA; October 7, 1997.

“Designing for Healthy and Comfortable Indoor Environments”, Construction Specification Institute, Santa Rosa, CA, November 6, 1997.

“Ventilation System Design for Good IAQ”, University of Tulsa 10<sup>th</sup> Annual Conference, San Francisco, CA, February 25, 1998.

“The Building Shell”, Tools For Building Green Conference and Trade Show, Alameda County Waste Management Authority and Recycling Board, Oakland, CA, February 28, 1998.

“Identifying Fungal Contamination Problems In Buildings”, The City of Oakland Municipal Employees, Oakland, CA, March 26, 1998.

“Managing Indoor Air Quality in Schools: Staying Out of Trouble”, CASBO, Sacramento, CA, April 20, 1998.

“Indoor Air Quality”, CSOOC Spring Conference, Visalia, CA, April 30, 1998.

“Particulate and Gas Phase Air Filtration”, ACGIH/OSHA, Ft. Mitchell, KY, June 1998.

“Building Air Quality Facts and Myths”, The City of Oakland / Alameda County Safety Seminar, Oakland, CA, June 12, 1998.

“Building Engineering and Moisture”, Building Contamination Workshop, University of California Berkeley, Continuing Education in Engineering and Environmental Management, San Francisco, CA, October 21-22, 1999.

“Identifying and Mitigating Mold Contamination in Buildings”, Western Construction Consultants Association, Oakland, CA, March 15, 2000; AIG Construction Defect Seminar, Walnut Creek, CA, May 2, 2001; City of Oakland Public Works Agency, Oakland, CA, July 24, 2001; Executive Council of Homeowners, Alamo, CA, August 3, 2001.

“Using the EPA BASE Study for IAQ Investigation / Communication”, Joint Professional Symposium 2000, American Industrial Hygiene Association, Orange County & Southern California Sections, Long Beach, October 19, 2000.

“Ventilation,” Indoor Air Quality: Risk Reduction in the 21<sup>st</sup> Century Symposium, sponsored by the California Environmental Protection Agency/Air Resources Board, Sacramento, CA, May 3-4, 2000.

“Workshop 18: Criteria for Cleaning of Air Handling Systems”, Healthy Buildings 2000, Espoo, Finland, August 2000.

“Closing Session Summary: ‘Building Investigations’ and ‘Building Design & Construction’”, Healthy Buildings 2000, Espoo, Finland, August 2000.

“Managing Building Air Quality and Energy Efficiency, Meeting the Standard of Care”, BOMA, MidAtlantic Environmental Hygiene Resource Center, Seattle, WA, May 23<sup>rd</sup>, 2000; San Antonio, TX, September 26-27, 2000.

“Diagnostics & Mitigation in Sick Buildings: When Good Buildings Go Bad,” University of California Berkeley, September 18, 2001.

“Mold Contamination: Recognition and What To Do and Not Do”, Redwood Empire Remodelers Association; Santa Rosa, CA, April 16, 2002.

“Investigative Tools of the IAQ Trade”, Healthy Indoor Environments 2002; Austin, TX; April 22, 2002.

“Finding Hidden Mold: Case Studies in IAQ Investigations”, AIHA Northern California Professionals Symposium; Oakland, CA, May 8, 2002.

“Assessing and Mitigating Fungal Contamination in Buildings”, Cal/OSHA Training; Oakland, CA, February 14, 2003 and West Covina, CA, February 20-21, 2003.

“Use of External Containments During Fungal Mitigation”, Invited Speaker, ACGIH Mold Remediation Symposium, Orlando, FL, November 3-5, 2003.

Building Operator Certification (BOC), 106-IAQ Training Workshops, Northwest Energy Efficiency Council; Stockton, CA, December 3, 2003; San Francisco, CA, December 9, 2003; Irvine, CA, January 13, 2004; San Diego, January 14, 2004; Irwindale, CA, January 27, 2004; Downey, CA, January 28, 2004; Santa Monica, CA, March 16, 2004; Ontario, CA, March 17, 2004; Ontario, CA, November 9, 2004, San Diego, CA, November 10, 2004; San Francisco, CA, November 17, 2004; San Jose, CA, November 18, 2004; Sacramento, CA, March 15, 2005.

“Mold Remediation: The National QUEST for Uniformity Symposium”, Invited Speaker, Orlando, Florida, November 3-5, 2003.

“Mold and Moisture Control”, Indoor Air Quality workshop for The Collaborative for High Performance Schools (CHPS), San Francisco, December 11, 2003.

“Advanced Perspectives In Mold Prevention & Control Symposium”, Invited Speaker, Las Vegas, Nevada, November 7-9, 2004.

“Building Sciences: Understanding and Controlling Moisture in Buildings”, American Industrial Hygiene Association, San Francisco, CA, February 14-16, 2005.

“Indoor Air Quality Diagnostics and Healthy Building Design”, University of California Berkeley, Berkeley, CA, March 2, 2005.

“Improving IAQ = Reduced Tenant Complaints”, Northern California Facilities Exposition, Santa Clara, CA, September 27, 2007.

“Defining Safe Building Air”, Criteria for Safe Air and Water in Buildings, ASHRAE Winter Meeting, Chicago, IL, January 27, 2008.

“Update on USGBC LEED and Air Filtration”, Invited Speaker, NAFA 2008 Convention, San Francisco, CA, September 19, 2008.

“Ventilation and Indoor air Quality in New California Homes”, National Center of Healthy Housing, October 20, 2008.

“Indoor Air Quality in New Homes”, California Energy and Air Quality Conference, October 29, 2008.

“Mechanical Outdoor air Ventilation Systems and IAQ in New Homes”, ACI Home Performance Conference, Kansas City, MO, April 29, 2009.

“Ventilation and IAQ in New Homes with and without Mechanical Outdoor Air Systems”, Healthy Buildings 2009, Syracuse, CA, September 14, 2009.



“Ten Ways to Improve Your Air Quality”, Northern California Facilities Exposition, Santa Clara, CA, September 30, 2009.

“New Developments in Ventilation and Indoor Air Quality in Residential Buildings”, Westcon meeting, Alameda, CA, March 17, 2010.

“Intermittent Residential Mechanical Outdoor Air Ventilation Systems and IAQ”, ASHRAE SSPC 62.2 Meeting, Austin, TX, April 19, 2010.

“Measured IAQ in Homes”, ACI Home Performance Conference, Austin, TX, April 21, 2010.

“Respiration: IEQ and Ventilation”, AIHce 2010, How IH Can LEED in Green buildings, Denver, CO, May 23, 2010.

“IAQ Considerations for Net Zero Energy Buildings (NZEB)”, Northern California Facilities Exposition, Santa Clara, CA, September 22, 2010.

“Energy Conservation and Health in Buildings”, Berkeley High School Green Career Week, Berkeley, CA, April 12, 2011.

“What Pollutants are Really There ?”, ACI Home Performance Conference, San Francisco, CA, March 30, 2011.

“Energy Conservation and Health in Residences Workshop”, Indoor Air 2011, Austin, TX, June 6, 2011.

“Assessing IAQ and Improving Health in Residences”, US EPA Weatherization Plus Health, September 7, 2011.

“Ventilation: What a Long Strange Trip It’s Been”, Westcon, May 21, 2014.

“Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures”, Indoor Air 2014, Hong Kong, July, 2014.

“Infectious Disease Aerosol Exposures With and Without Surge Control Ventilation System Modifications”, Indoor Air 2014, Hong Kong, July, 2014.

“Chemical Emissions from E-Cigarettes”, IMF Health and Welfare Fair, Washington, DC, February 18, 2015.

“Chemical Emissions and Health Hazards Associated with E-Cigarettes”, Roswell Park Cancer Institute, Buffalo, NY, August 15, 2014.

“Formaldehyde Indoor Concentrations, Material Emission Rates, and the CARB ATCM”, Harris Martin’s Lumber Liquidators Flooring Litigation Conference, WQ Minneapolis Hotel, May 27, 2015.

“Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposure”, FDA Public Workshop: Electronic Cigarettes and the Public Health, Hyattsville, MD June 2, 2015.

“Creating Healthy Homes, Schools, and Workplaces”, Chautauqua Institution, Athenaeum Hotel, August 24, 2015.

“Diagnosing IAQ Problems and Designing Healthy Buildings”, University of California Berkeley, Berkeley, CA, October 6, 2015.

“Diagnosing Ventilation and IAQ Problems in Commercial Buildings”, BEST Center Annual Institute, Lawrence Berkeley National Laboratory, January 6, 2016.

“A Review of Studies of Ventilation and Indoor Air Quality in New Homes and Impacts of Environmental Factors on Formaldehyde Emission Rates From Composite Wood Products”, AIHce2016, May, 21-26, 2016.

“Admissibility of Scientific Testimony”, Science in the Court, Proposition 65 Clearinghouse Annual Conference, Oakland, CA, September 15, 2016.

“Indoor Air Quality and Ventilation”, ASHRAE Redwood Empire, Napa, CA, December 1, 2016.



## ATTACHMENT B

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*Via Email*

March 2, 2022

Jason Van Patten, Senior Planner  
Planning & Community Development Dept.  
City of Pasadena  
175 North Garfield Avenue  
Pasadena, CA 91101  
[jvanpatten@cityofpasadena.net](mailto:jvanpatten@cityofpasadena.net)

**Re: Comment on Draft Environmental Impact Report, Affinity Project (SCH 2021080103)**

Dear Mr. Van Patten:

I am writing on behalf of Supporters Alliance for Environmental Responsibility ("SAFER") regarding the Draft Environmental Impact Report ("DEIR") prepared for the Affinity Project (SCH 2021080103), including all actions related or referring to the proposed construction of a 154,000 square foot, seven-story medical office building with ground-floor commercial uses, and a 184,376 square foot, seven-story assisted living building with 85,800 square feet of assisted living uses and 98,576 square feet of independent living uses, with five subterranean parking levels providing up to 850 parking spaces, located on an approximately 3.3 acre site between 465 and 577 South Arroyo Parkway in the City of Pasadena ("Project").

After reviewing the DEIR, we conclude that the DEIR fails as an informational document and fails to impose all feasible mitigation measures to reduce the Project's impacts. SAFER requests that the Planning and Community Development Department address these shortcomings in a revised draft environmental impact report ("RDEIR") and recirculate the RDEIR prior to considering approvals for the Project.

We reserve the right to supplement these comments during review of the Final EIR for the Project and at public hearings concerning the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist.*, 60 Cal. App. 4th 1109, 1121 (1997).

Sincerely,

Richard Drury

**ATTACHMENT H  
PROJECT PLANS**

<https://www.cityofpasadena.net/planning/planned-development-39-affinity-project/>